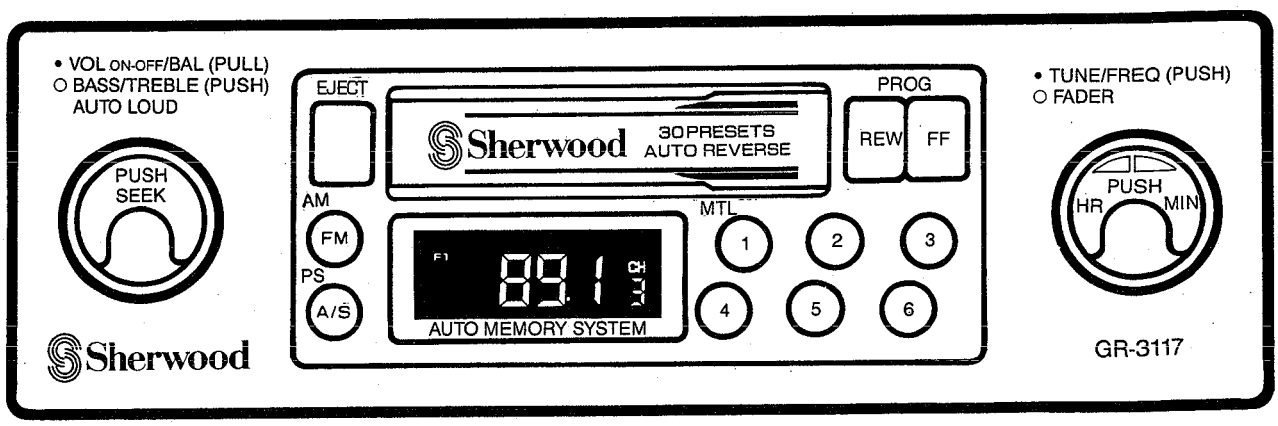
SERVICE MANUAL

GR-3117

AM/FM
CASSETTE RECEIVER



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Sherwood

Specification

1. Audio Section

Rms Output/CH into 4 OHM	
@ 50Hz-20kHz, 0.5% THD	4 Watts
@ 1kHz, 10% THD	6 Watts
Frequency Response (−3dB)	50Hz-25kHz
Tone Control	
Bass @ 100Hz	±10dB
Treble @ 10kHz	±10dB

2. Tuner Section

FM Section

Frequency Range	87.5-108.0MHz
Usable Sensitivity	
Mono	6μV (26.8dBf)
50dB Quieting Sensitivity	
Stereo	100μV (51.2dBf)
S/N Ratio	
Mono	66dB
Stereo	64dB
Stereo Separation @ 1kHz	35dB
Channel Selectivity	65dB
Capture Ratio	1.7dB
Image Rejection Ratio	65dB
IF Rejection Ratio	1.7dB

AW Section

Frequency Range	530-1710kHz
Usable Sensitivity @ 20dB S/N	40dBμV
Selectivity @ ±10kHz	35dB
Signal To Noise @ REF 30% MOD.	45dB

3. Cassette Section

Frequency Response, ±3dB	
Metal, CrO_2	50Hz-12kHz
Normal	50Hz-10kHz
Wow & Flutter (Wrms)	0.25%
S/N Ratio CCIR/ARM WTD	62dB

4. General

Operating Voltage	DC 14.4V Negative Ground
Speaker Impedance	4 ohms

5. Chassis Dimensions

W	178mm(7-3/32")
H	50mm(2")
D	130mm(5-9/64")

6. Nose Piese Dimensions

W	105mm(4-1/8")
H	45mm(1-25/32")
D	34mm(1/19/50")

7. Net Weight ..... 1.7Kg(3.75 lbs)

Note: Design and specification subject to change without notice improvements

Disassembly Instructions

1. To remove the top cover

1). Remove 2 screws ⓐ from the heat sink. (Fig. 1)
2). Pull back the top cover and lift in the direction of the arrow.

2. To remove the bottom cover.

1). Turn the unit up side down.
2). Remove 2 screws ⓑ from the back and side of the bottom cover and remove in the direction of the arrow. (Fig. 1)

3. To remove the nose piece

1). Remove 4 screws ⓒ from the nose piece. (Fig. 1)
2). Pull nose piece forward. (Fig. 1)

4. To remove LCD p.c board

1). Remove 2 screws ⓔ from LCD P.C. Board. (Fig. 2)
2). Pull LCD P.C. Board and lift in the direction of the arrow. (Fig. 2)

5. To remove deck machanism

1). Remove 3 screws ⓓ from the Deck Mechanism.(Fig. 2)
2). Detach the connectors from main P.C. Board.(Fig. 2)
3). Pull Deck Mechanism and lift the direction of the arrow. (Fig. 2)

6. To remove the main P.C. Board

1). Remove 7 screws ⓕ from the main P.C. board.(Fig. 3)
2). Pull main P.C. board and lift in the direction of the arrow. (Fig. 3)

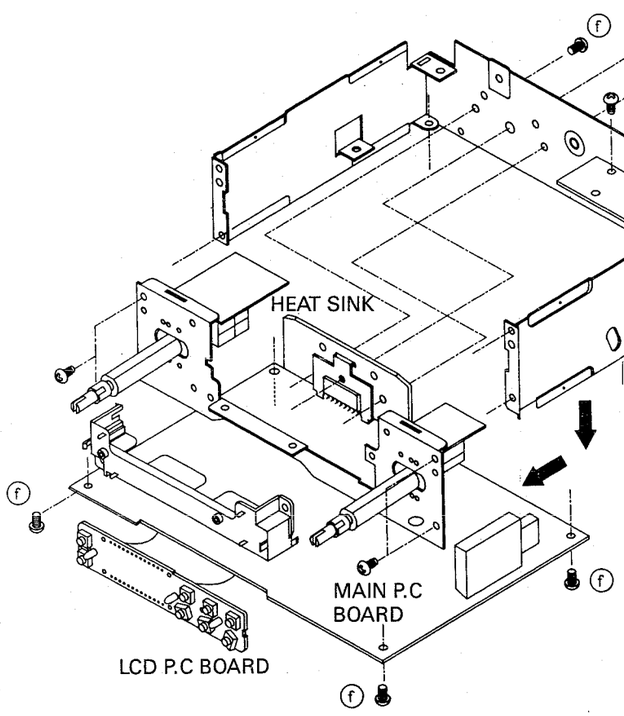


Figure 3

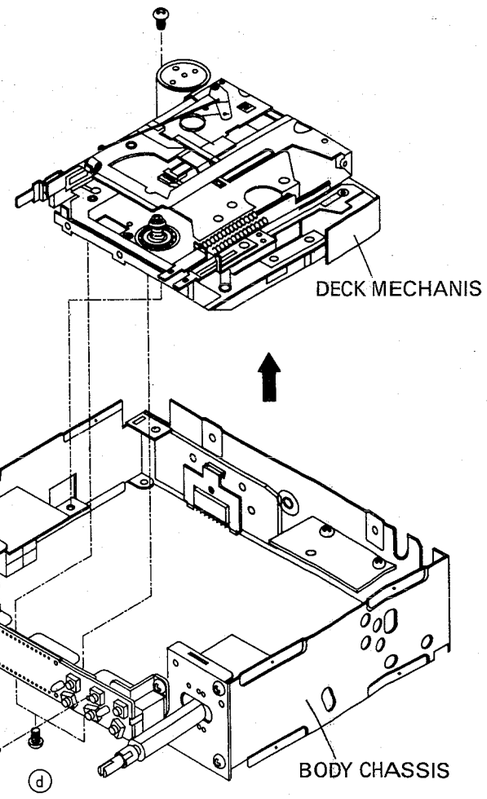
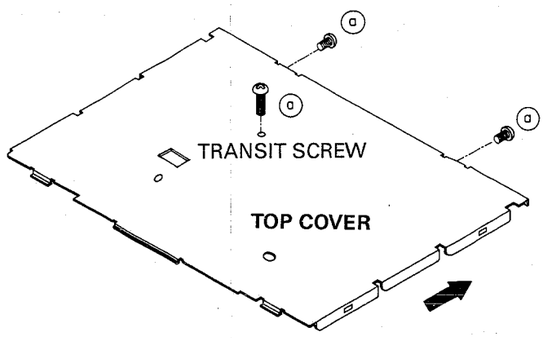


Figure 2



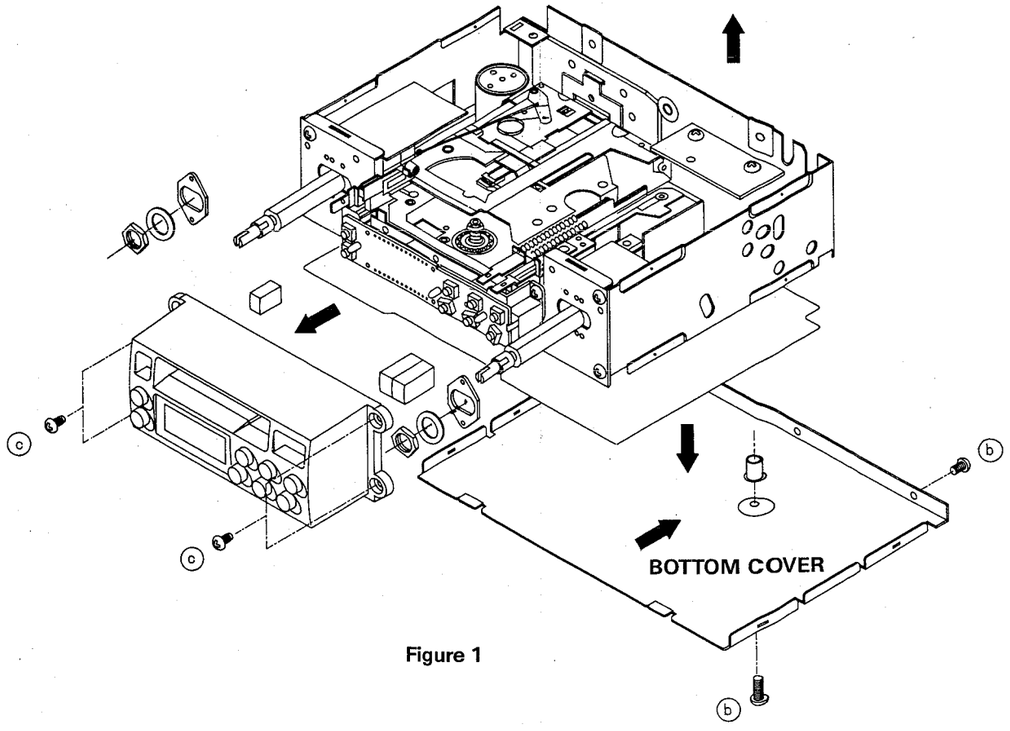


Figure 1

Alignment Instructions

Equipment Required

1. AM/FM Standard Signal Generator
2. FM IF Sweep Generator
3. Stereo Signal Generator
4. Oscilloscope
5. SSVM (Output Meter)
6. DC Power Supply
7. Frequency Counter
8. Standard Tape

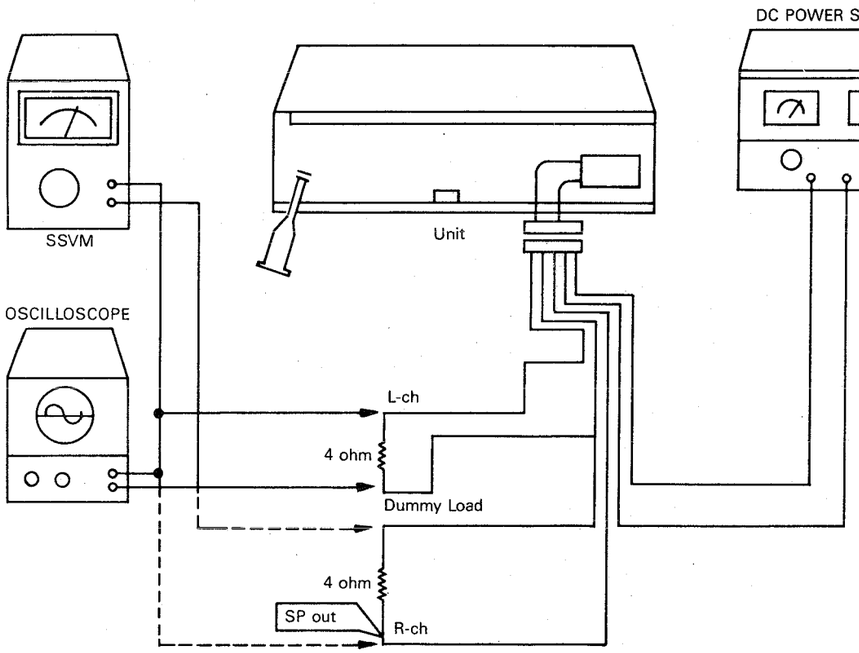
Important

1. Non-ferrous tools should be used for this alignment.
2. Signal should be kept as low as possible to avoid clipping.
3. 400 Hz modulation with 30% amplitude is to be used for AM standard modulator (400 Hz with 75 kHz deviation for FM).
4. Output impedance of signal generator should be matched with the impedance of dummy antenna.

Tuner Alignment Pre-setting

Pre-setting of the frequency at each adjustment point will make the tuning adjustment easier.
AM Presettings are: 530kHz, 600kHz, 1000kHz, 1400kHz, 1620kHz.
FM Presettings are: 90.1MHz, 98.1MHz, 106.1MHz.

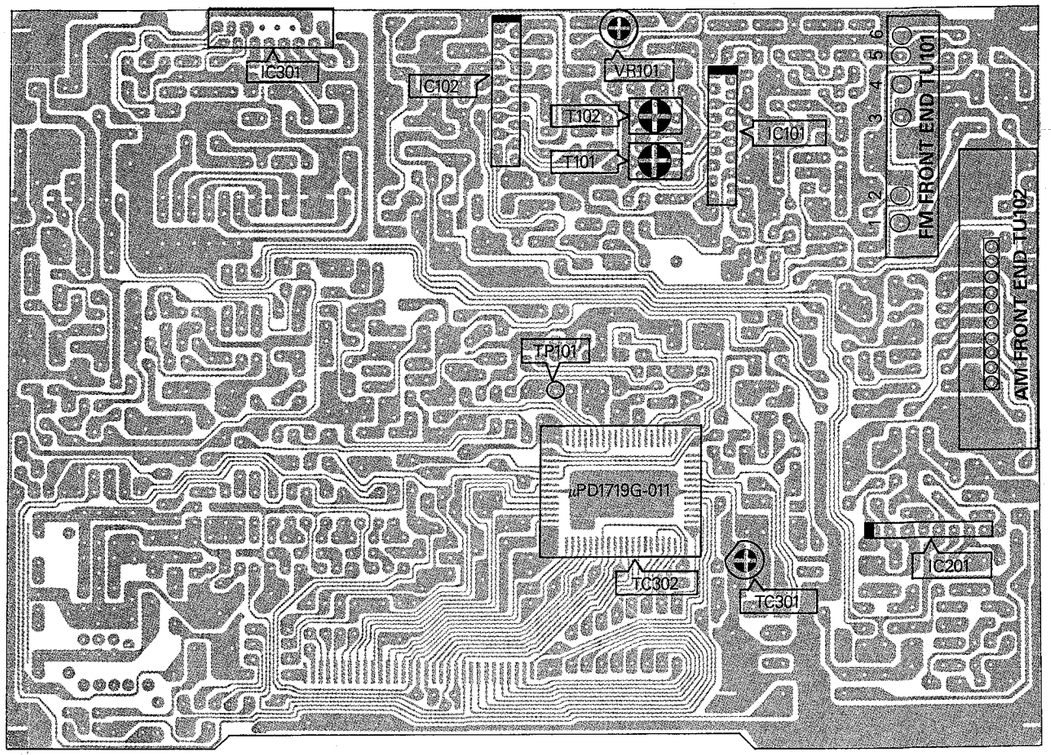
TEST EQUIPMENT CONNECTIONS



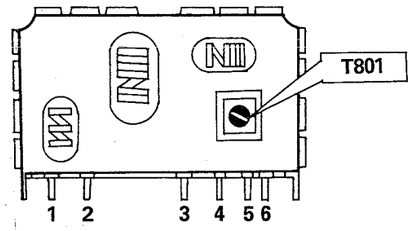
Standard Adjustment Condition

a. Power Supply ..... 14.4V DC
b. AM/FM Selector Switch ..... AM or FM
c. Tone Control ..... Flat
d. Balance Control ..... Center
e. Volume ..... Adjust to get 1.0W power output level
f. Load impedance ..... 4 ohm
g. Equipment Connections ..... See above test equipment connection

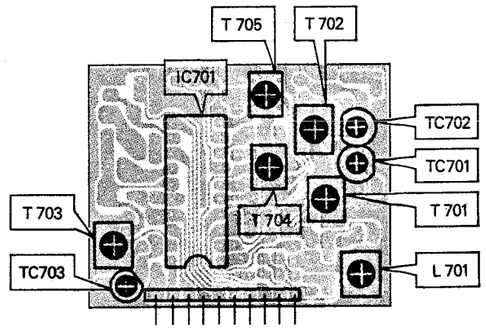
ADJUSTMENT POINT



MAIN PC BOARD POINTS
Figure. 1



FM FRONT END (TU101) POINT
Figure. 2



AM FRONT END (TU102) POINTS
Figure. 3

Note: Both AM and FM Front ends are pre-adjusted at factory. Additional adjustments will be required only when someparts are changed or replaced.

Radio Section Adjustment

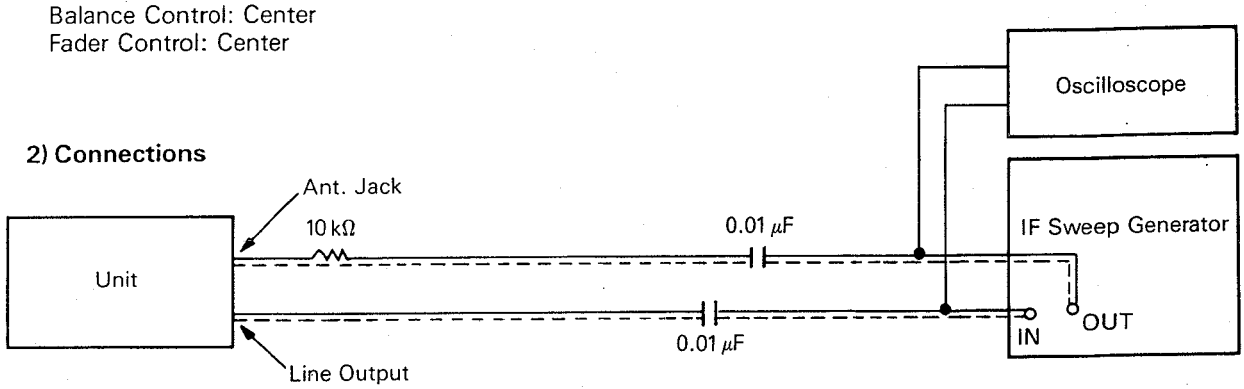
I. FM ADJUSTMENT

1. IF Adjustment

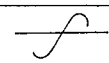
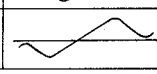
1) Setting

Band Selector: FM-ST
Bass Control: Center
Treble Control: Center
Volume Control: Min.
Balance Control: Center
Fader Control: Center

2) Connections



3) Adjustments

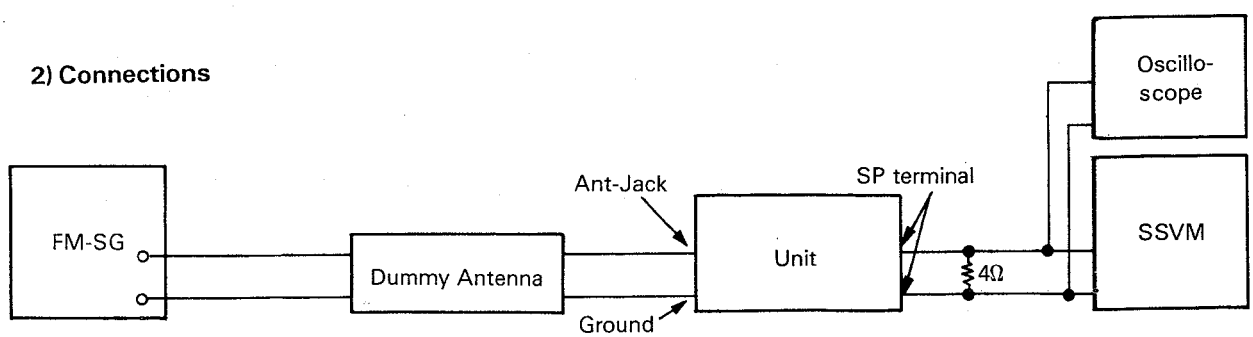
Signal Generator	Dial Setting	Adjust	Reading	Remarks
10.7MHz	98.1MHz	T801 FM-IFT		Turn the FM-IFT fully counterclockwise in Front-end.
		T101 FM-IFT A		Adjust the IFT-A and FM-IFT to the slowly clockwise so that the output wave becomes the symmetrical sinewave.
		T102 FM-IFT B		Adjust the IFT-B so that teh straight line of the S curve can e achieved.

2. Sensitivity Adjustment

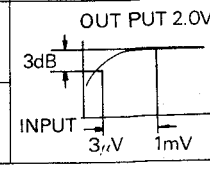
1) Setting

Band Selector: FM-ST
Bass Control: Center
Treble Control: Center
Volume Control: Approximately Center
Balance Control: Center
Fader Control: Center

2) Connections



3) Adjustments

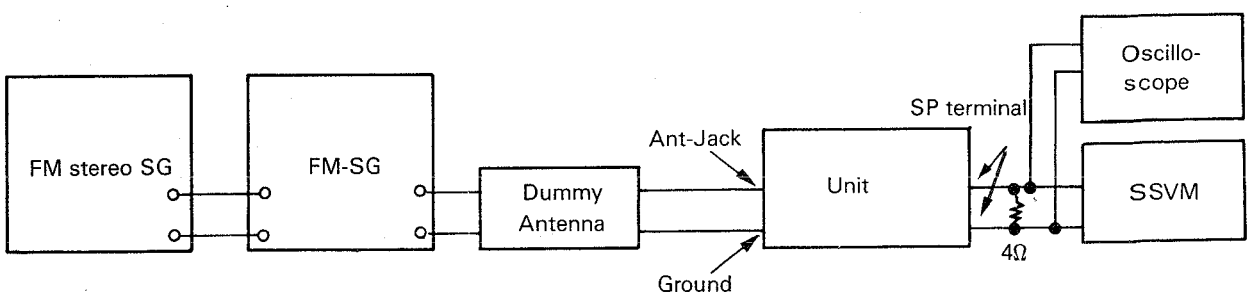
Item	Signal generator		Dial setting	Adjust	Reading	Remarks
	Frequency	Modulation				
1	98.1MHz	1kHz, 100% Mod. 1mV	98.1MHz	VOLUME	2.0V	
2	98.1MHz	1kHz, 100% Mod. 3μV	98.1MHz	T801	Max	

4. Separation adjustment

1) Setting

Band Selector: FM-ST
Bass Control: Center
Treble Control: Center
Volume Control: Approximately center
Balance Control: Center
Fader Control: Center

2) Connections



3) Adjustment

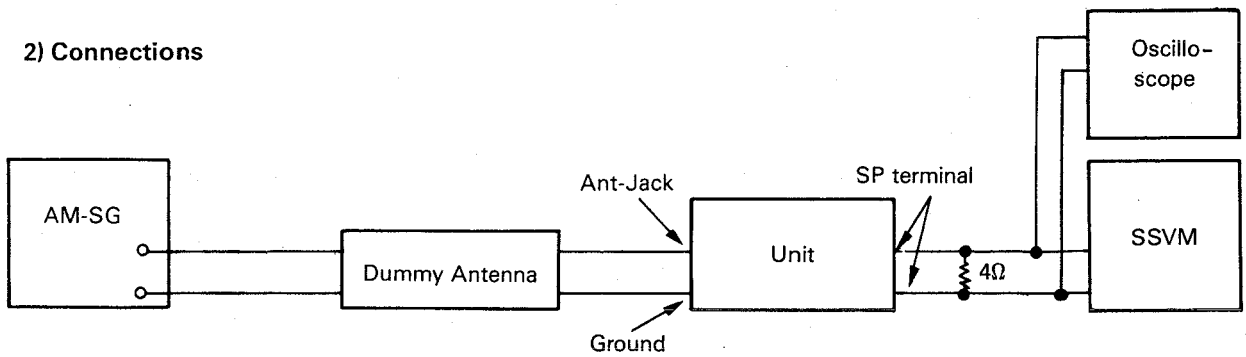
Item	Signal generator		Dial setting	Adjust	Reading	Remarks
	Frequency	Modulation				
1	98.1MHz, 1mV	Pilot: 19kHz 10% L+R: 1kHz 90%	98.1MHz	VR101	R-CH: Min.	See figure 1 for adjustment point
2		Pilot: 19kHz 10% L−R: 1kHz 90%		VR101	L-CH: Min.	

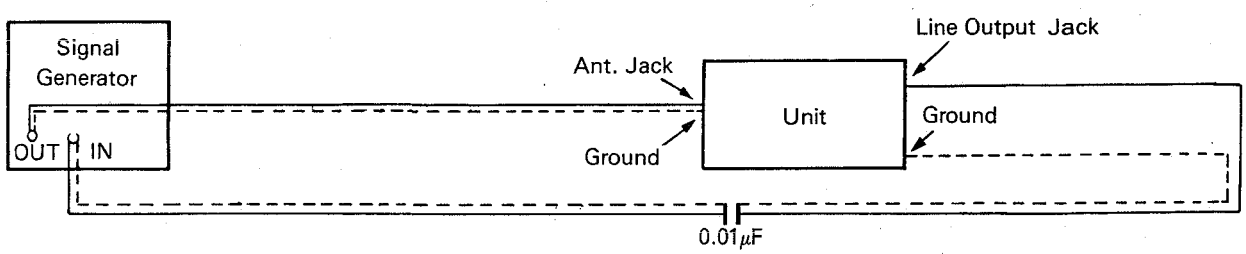
II. AM IF/TRACKING ADJUSTMENT

1) Setting

Band Selector: AM
Bass Control: Center
Treble Control: Center
Volume Control: Approximately center
Balance Control: Center
Fader Control: Center

2) Connections





3) Adjustments

Item		Signal generator		Dial setting	Adjust	Reading	Remarks
		Frequency	Modulation				
1	IF	450kHz	1kHz 30% 30μV. Mod.	1000kHz	T704, T705	Max.	See figure. 3 for adjustment point
2	Tracking	600kHz	1kHz 30% 30μV	600kHz	T701, T702	Max.	
3	Tracking	1400kHz	1kHz 30% 30μV	1400kHz	TC701, TC702	Max.	

III. TAPE DECK MECHANISM CLEANING

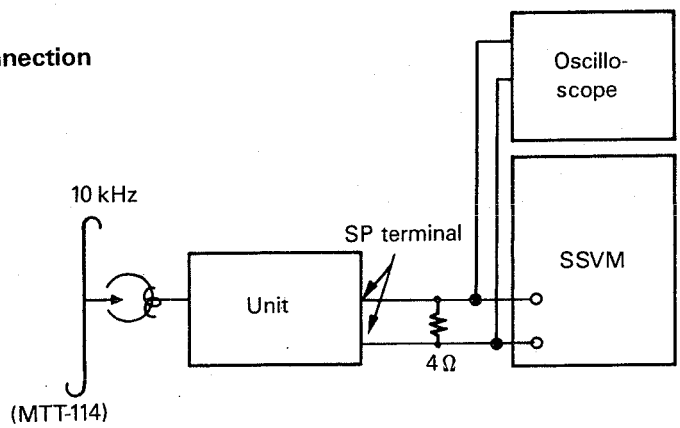
Clean the playback head, capstan shaft and pinch roller before head azimuth adjustment.

1. Head azimuth adjustment

1) Setting

Playback mode
Tape selector: Normal
Dolby NR switch: Off
Bass control: Center
Treble control: Center
Volume control: Approximately center
Balance control: Center
Fader control: Center

2) Connection



3) Adjustment

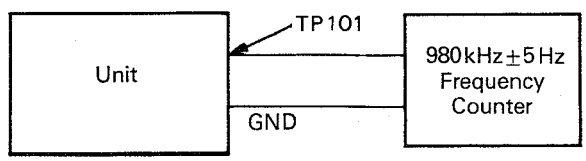
Playback a test tape (MTT-114, 10kHz) and adjust the azimuth adjustment screw for maximum output.

2. Clock accuracy adjustment

1) Setting

Band Selector: AM
Bass Control: Center
Treble Control: Center
Volume Control: Min.
Balance Control: Center
Fader Control: Center

2) Connections



3) Adjustments

Dial setting	Adjust	Reading	Remarks
530kHz	TC301	980kHz ± 5Hz	See figure 3 for adjustment point

For example:

In case of AM OSC frequency 1,990.00kHz;
a) 1,999.99−2,000=(−)0.01
b) (−) 0.01 divided by 2,000=(−)0.000005
c) (−) 0.000005×86,400=(−)0.432
d) (−) 0.432 means clock is 0.432 sec/day slow.
e) (+) figure means clock is fast.

Note:

Troubleshooting

Symptom	Probable cause	Remedy
No Sound at all	1) Faulty DC Power Cord 2) Defective Power Switch 3) Blown Primary Fuse 4) Defective IC301	1) Replace. 2) Replace. 3) Replace. 4) Replace.
Display does not work	1) Broken Display Panel 2) Defective Stabilizer (D336)	1) Replace. 2) Replace.
Display works but no sound	1) Defective Power IC301 2) Defective Component of Power Supply Circuit 3) Defective Q316L/R of the Audio Circuit	1) Replace. 2) Replace. 3) Replace.
Blown Fuse	1) Power Supply Circuit defective 2) Short Circuits in Power IC301	1) Check and replace if necessary. 2) Replace.
No output on the channel with Volume at maximum and Balance at center when a test signal is applied.	1) Defective Main Amp. IC301 2) Defective Main Amp. Circuit/Component(s)	1) Replace. 2) Fix or replace the defective circuit/component(s).
No AM	1) Poor Contact in Selector Switch 2) Defective AM Frontend 3) Defective controller circuits and component(s)	1) Repair or replace. 2) Replace. 3) Fix and replace the defective controller circuit(s)/component(s).
No FM	1) Defective FM Frontend 2) Poor Contact in Selector Switch 3) Defective IC101, IC102 4) Defective Controller Circuit(s) and Component(s)	1) Replace. 2) Repair or replace. 3) Replace. 4) Fix and replace the defective circuit(s) and component(s).
AUTO SEEK does not work (AM or FM)	1) Poor contact in AUTO SEEK/ MANUAL switch 2) In FM Mode, defective Q105, Q301R, Q302R and FM Frontend 3) In AM mode, defective Q107, 301L, 302L	1) Repair or replace. 2) Replace the defective part(s). 3) Replace the defective part(s).
MANUAL TUNE does not work (up/down)	1) Poor contact in MANUAL switch 2) Poor contact in MANUAL UP/DOWN Key	1) Repair or replace. 2) Replace.
MEMORY Setting (Keys 1-6) does not work	Poor contact in Memory set key	Repair or replace.
LED does not light up	Defective LED	Replace.
BASS has no effect	1) Faulty Bass VR 2) Defective Bass Control circuit(s)/component(s)	1) Repair or replace. 2) Fix and replace the defective circuit(s)/component(s).
TREBLE has no effect	1) Faulty TREBLE VR 2) Defective TREBLE Control circuit(s)/component(s)	1) Repair or replace. 2) Fix and replace the defective circuit(s)/component(s).
STEREO Display or FM Stereo does not work	1) Defective IC102	1) Replace.

Symptom	Probable cause	Remedy
No tape sound	1) Motor — Dead a) Defective b) Open motor leads 2) Defective Tape Head 3) Drive Belt off 4) Defective IC201	1) Replace or repair. a) Replace. b) Soldering. 2) Replace. 3) Hook the Belt. If off again, replace. 4) Replace.
Back-up lead is connected, but Memory setting does not work	Defective diode D325L	Replace.

Note:

Electrical Parts List

Ref. No.	Part No	Description	Position
Main P.C Board 4002604700			
• Integrated Circuits			
IC101	2168317135	LA1145, FM IF DET. SANYO	C1
IC102	2168417106	LA3430, MPX. SANYO	C1
IC201	2168017105	LA3161, EQ AMP. SANYO	D3
IC301	2168011130	HA13119, POWER AMP.	B1
IC302	2138013129	μPD 1719G-011 PLL SYNTHESIZER	C3
• Transistors			
Q101	2208622107	NPN 2SC 1740(S) R-OHM(K)	D2
Q102		NOT USED	
Q103, Q104	2008406104	NPN 2SC 3195(Y) KEC	D1
Q105	2208622107	NPN 2SC 1740(S) R-OHM(K)	C2
Q106	2208622107	NPN 2SC 1740(S) R-OHM(K)	D1
Q107	2208622107	NPN 2SC 1740(S) R-OHM(K)	D2
Q108 ~ Q200		NOT USED	
Q201L/R	2208622107	NPN 2SC 1740(S) R-OHM(K)	D3
Q202 ~ Q300		NOT USED	
Q301L/R	2008610103	NPN 2SD 636(R) MATSUSHITA	B2
Q302L/R	2008610103	NPN 2SD 636(R) MATSUSHITA	B2
Q303	2208222106	PNP 2SA 933(S) R-OHM(K)	C2
Q304	2208622107	NPN 2SC 1740(S) R-OHM(K)	A3
Q305L/R	2208222106	PNP 2SA 933(S) R-OHM(K)	B3
Q306L/R	2208622107	NPN 2SC 1740(S) R-OHM(K)	B3
Q307	2208622107	NPN 2SC 1740(S) R-OHM(K)	A2
Q308	2208222106	PNP 2SA 933(S) R-OHM(K)	B3
Q309	2008622107	NPN 2SC 1740(S) R-OHM(K)	B3
Q310	2208222106	PNP 2SA 933(S) R-OHM(K)	C2
Q311	2208622107	NPN 2SC 1740(S) R-OHM(K)	D3
Q312		NOT USED	
Q313	2208622107	NPN 2SC 1740(S) R-OHM(K)	D2
Q314	2208622107	NPN 2SC 1740(S) R-OHM(K)	C2
Q315	2208622107	NPN 2SC 1740(S) R-OHM(K)	B2
Q316L/R	2008610101	NPN 2SD 1330(S) MATSUSHITA	A3
Q317	2028406118	NPN 2SD 2058(Y) KEC	A2
Q318	2208622107	NPN 2SC 1740(S) R-OHM(K)	A2
Q319, Q320	2208222106	PNP 2SA 933(S) R-OHM(K)	A2
Q321	2208222106	PNP 2SA 933(S) R-OHM(K)	B2
Q322	2208622107	NPN 2SC 1740(S) R-OHM(K)	D1
• Diodes			
D101L'R	2058322101	SWITCHING 1N4148(M) 60V/500mW Silicon	D2
D102		NOT USED	
D103, D104	2058322101	SWITCHING 1N4148(M) 60V/500mW Silicon	C1
D105 ~ D200		NOT USED	
D201	2058599107	ZENER DZ-9.1BM 9.1V/50mW Silicon	D3
D202	2058106100	RECTIFIER 1N4002 100V/1A . Silicon	A2
D203L/R	2058322101	SWITCHING 1N4148(M) 60V/500mW Silicon	D3
D204, D205	2058322101	SWITCHING 1N4148(M) 60V/500mW Silicon	B3
D206 ~ D300		NOT USED	
D301L/R	2058322101	SWITCHING 1N4148(M) 60V/500mW Silicon	B1
D302		NOT USED	
D303	2058322101	SWITCHING 1N4148(M) 60V/500mW Silicon	B2
D304	2058322101	SWITCHING 1N4148(M) 60V/500mW Silicon	D2
D305 ~ D309	2058322101	SWITCHING 1N4148(M) 60V/500mW Silicon	B3

Ref. No.	Part No.	Description	Position
D310		NOT USED	
D311, D312	2058322101	SWITCHING 1N4148(M) 60V/500mW Silicon	B3
D313, D314		NOT USED	
D315, D318	2058322101	SWITCHING 1N4148(M) 60V/500mW Silicon	B3
D319		NOT USED	
D320	2058322101	SWITCHING 1N4148(M) 60V/500mW Silicon	B3
D321	2058322101	SWITCHING 1N4148(M) 60V/500mW Silicon	A2
D322, D324	2058322101	SWITCHING 1N4148(M) 60V/500mW Silicon	B3
D325L/R	2058322101	SWITCH 1N4148(M) 60V/500mW Silicon	A2
D326	2058322101	SWITCHING 1N4148(M) 60V/500mW Silicon	C2
D327, D328	2058106100	SWITCHING 1N4002 100V/1A Silicon	A2
D329	2058322101	SWITCHING 1N4148(M) 60V/500mW Silicon	C3
D330, D331	2058322101	SWITCHING 1N4148(M) 60V/500mW Silicon	A2
D332	2058599122	ZENER DZ-11BM 11V/500mW Silicon	A2
D333	2058599122	ZENER DZ-11BM 11V/500mW Silicon	B2
D334, D335		NOT USED	
D336	2058599104	ZENER DZ-5.6BM 5.6V/500mW Silicon	A2
D337	2058322101	SWITCHING 1N4148(M) 60V/500mW Silicon	D3
D338 ~ D341	2058322101	SWITCHING 1N4148(M) 60V/500mW Silicon	B3
• Crystal			
X-TAL	3938101490	X-TAL 4.5MHz, 9AT	
• Filters			
CF101, CF102	3908011061	FILTERS C SFC 10.7MA8H	
CF103	3938001009	RESONATOR CSB 456F11	
• Coils			
T101	2083501050	COIL FM IFT 1	C1
T102	2838501060	COIL FM IFT 2	C1
L101	2648601510	COIL INDUCTOR 4.7 μH	B1
L201L/R	2648601630	COIL INDUCTOR 32mH	B1
TC301	3838001010	TRIMMER TZ 03R200F (20p)	C3
• Capacitors			
C101	3479147021	ELECTROLYTIC 47μF 10V SA M	
C102	3519233520	CERAMIC 0.022 μF 25V Z	
C103	3479210971	ELECTROLYTIC 1 μF 50V SA M	
C104	3519233520	CERAMIC 0.022 μF 25V Z	
C105	3509222530	CERAMIC 0.022 μF 50V J	
C106	3479247971	ELECTROLYTIC 4.7 μF 50V SA M	
C107, C108	3509222233	CERAMIC 0.0022 μF 50V K	
C109		NOT USED	
C110, C111	3519223520	CERAMIC 0.022 μF 25V Z	
C112	3479147021	ELECTROLYTIC 47 μF 10V SA M	
C113 C115		NOT USED	
C116	3479210871	ELECTROLYTIC 0.1 μF 50V SA M	
C117	3539102130	CERAMIC 0.001 pF 50V Z	
C118	3519223520	CERAMIC 0.022 μF 25V Z	
C119	3479210071	ELECTROLYTIC 10 μF 50V SA M	
C120, C121	3479210971	ELECTROLYTIC 1 μF 50V SA M	
C122	3509330130	CERAMIC 33 pF 50V J	
C123	3479210871	ELECTROLYTIC 0.1 μF 50V SA M	
C124	3479247971	ELECTROLYTIC 4.7 μF 50V SA M	
C125	3509101130	CERAMIC 100 pF 50V Z	
C126	3679332120	MYLAR 0.0033 μF 100V J	
C127	3609333120	MYLAR 0.033 μF 100V J	
C128	3609333120	ELECTROLYTIC 1 μF 50V SA M	
C129	3409210971	ELECTROLYTIC 3.3 μF 50V SA M	

Ref. No.	Part No.	Description	Position
C130	3609183120	MYLAR 0.018 μF 100V J	
C131	3409247021	ELECTROLYTIC 47 μF 10V SA M	
C132	3519223520	CERAMIC 0.022 F 25V Z	
C133	3409210971	ELECTROLYTIC 1 μF 50V SA M	
C134L/R	3609222120	MYLAR 0.0022 μF 100V J	
C135L/R	3609222120	MYLAR 0.0022 μF 100V J	
C136L/R	3609222120	MYLAR 0.0022 μF 100V J	
C137L/R	3609332120	MYLAR 0.0033 μF 100V J	
C138		NOT USED	
C139	3409220131	ELECTROLYTIC 22 μF 10V SA M	
C140	3609223120	MYLAR 0.022 μF 100V J	
C141 ~ C200		NOT USED	
C201L/R	3479210971	ELECTROLYTIC 1 μF 50V SA M	
C202R/L	3509102530	CERAMIC 0.001 μF 50V J	
C203		NOT USED	
C204R/L	3479247021	ELECTROLYTIC 47 μF 10V SA M	
C205R/L	3609222120	MYLAR 0.022 μF 100V J	
C206	3479210121	ELECTROLYTIC 100 μF 10V SA M	
C207R/L	3679183120	MYLAR 0.018 μF 100V J	
C208	3479215971	ELECTROLYTIC 4.7 μF 50V SA M	
C208 ~ C300		NOT USED	
C301	3519223520	CERAMIC 0.022 μF 25V Z	
C302L	3409633970	ELECTROLYTIC 3.3 μF 50V NP M	
C302R	3479222971	ELECTROLYTIC 2.2 μF 50V SA M	
C303L/R	3679103120	MYLAR 0.01 μF 100V J	
C304, C305	3519223520	CERAMIC 0.022 μF 25V Z	
C306	3479210121	ELECTROLYTIC 100 μF 10V SA M	
C307 ~ C309	3519223520	CERAMIC 0.022 μF 25V Z	
C310	3579330130	CERAMIC 33 pF 50V Z	
C311	3529100210	CERAMIC 10 pF 50V D	
C312, C313	3479210121	ELECTROLYTIC 100 μF 10V SA M	
C314 ~ C316	3519223520	CERAMIC 0.022 μF 25V Z	
C317 ~ C320		NOT USED	
C321	3479210971	ELECTROLYTIC 1 μF 50V SA M	
C322L/R	3509471130	CERAMIC 470 pF 50V Z	
C323	3409247872	ELECTROLYTIC 0.47 μF 50V SA M	
C324	3479210121	ELECTROLYTIC 100 μF 10V SA M	
C325	3409247872	ELECTROLYTIC 0.47 μF 50V SA M	
C326	3479210121	ELECTROLYTIC 100 μF 10V SA M	
C327L/R	3479210121	ELECTROLYTIC 100 μF 10V SA M	
C328L/R	3679104120	MYLAR 0.1 μF 100V J	
C329L/R	3409210221	ELECTROLYTIC 1000 μF 10V SA M	
C330	3409233031	ELECTROLYTIC 33 μF 16V SA M	
C331	3409210233	ELECTROLYTIC 1000 μF 16V SA M	
C332 ~ C336	3519223520	CERAMIC 0.022 μF 25V Z	
C337	3409210121	ELECTROLYTIC 100 μF 10V SA M	
C338	3409247131	ELECTROLYTIC 470 μF 10V SA M	
C339	3519223520	CERAMIC 0.022 μF 25V Z	
C340	3409233131	ELECTROLYTIC 330 μF 16V SA M	
• Resistors (All Resistors are Carbon Film 1/5W J Type Unless Otherwise Noted)			
R101	3069680970	68 ohm	
R102	3069101970	100 ohm	
R103	3069680970	68 ohm	
R104, R105	3069104970	100K ohm	
R106		NOT USED	
R107	3069103970	10K ohm	
R108		NOT USED	

Ref. No.	Part No.	Description	Position
R109	3069472970	4.7K ohm	
R110		NOT USED	
R111	3069473970	47K ohm	
R112	3069103970	10K ohm	
R113		NOT USED	
R114	3069331970	330 ohm	
R115	3069471970	470 ohm	
R116	3069470970	47 ohm	
R117	3069471970	470 ohm	
R118	3069331970	330 ohm	
R119	3069332970	3.3K ohm	
R120	3069471970	470 ohm	
R121, R122	3069331970	330 ohm	
R123		NOT USED	
R124	3069332970	3.3K ohm	
R125	3069223970	22K ohm	
R126	3069683970	68K ohm	
R127	3069330970	33 ohm	
R128	3069822970	8.2K ohm	
R129	3069473970	47K ohm	
R130	3069393970	39K ohm	
R131		NOT USED	
R132	3069682970	6.8K ohm	
R133, R134	3069104970	100K ohm	
R135	3069272970	2.7K ohm	
R136	3069562970	5.6K ohm	
R137	3069223970	22K ohm	
R138	3069222970	2.2K ohm	
R139, R140	3069104970	100K ohm	
R141	3069273970	27K ohm	
R142	3069103970	10K ohm	
R143	3069102970	1K ohm	
R144	3069470970	47 ohm	
R145	3069562970	5.6K ohm	
R146L/R	3069332970	3.3K ohm	
R147L/R	3069332970	3.3K ohm	
R148L/R	3069563970	56K ohm	
R149	3069472970	4.7K ohm	
R150	3069102970	1K ohm	
R151, R152	3069103970	10K ohm	
R153	3069223970	22K ohm	
R154	3069333970	33K ohm	
R155, R156	3069473970	47K ohm	
R157	30639102970	1K ohm	
R158	3069470970	47 ohm	
R159L/R	3069473970	47K ohm	
R160 ~ R200		NOT USED	
R201L/R	3069104970	100K ohm	
R202L/R	3069101970	100 ohm	
R203L/R	3069562970	5.6K ohm	
R204		NOT USED	
R205L/R	3069104970	100K ohm	
R206L/R	3069332970	3.3K ohm	
R207L/R	3069392970	3.9K ohm	
R208L/R	3069104970	100K ohm	
R209	3069472970	4.7K ohm	
R210	3069104970	100K ohm	
R211	3069102970	1K ohm	
R212	3069101970	100 ohm	
R213	3069221970	220 ohm	

Ref. No.	Part No.	Description	Position
R214	3069103970	10K ohm	
R215	3069100970	10 ohm	
R216~R300		NOT USED	
R301L	3069332970	3.3K ohm	
R301R	3069472970	4.7K ohm	
R302L/R	3069105970	1M ohm	
R303		NOT USED	
R304L/R	3069102970	1K ohm	
R305L/R	3069332970	3.3K ohm	
R306L/R	3069102970	1K ohm	
R307	3069473970	47K ohm	
R308	3069103970	10K ohm	
R309	3069223970	22K ohm	
R310	3069103970	10K ohm	
R311		NOT USED	
R312	3069473970	47K ohm	
R313	3069103970	10K ohm	
R314	3069104970	100K ohm	
R315	3069472970	4.7K ohm	
R316, R317	3069103970	10K ohm	
R318L/R	3069473970	47K ohm	
R319L/R	3069473970	47K ohm	
R320L/R	3069103970	10K ohm	
R321	3069104970	100K ohm	
R322	3069272970	2.7K ohm	
R323, R324	3069221970	220 ohm	
R325		NOT USED	
R326L/R	3069102970	1K ohm	
R327	3069333970	33K ohm	
R328	3069473970	47K ohm	
R329	3069103970	10K ohm	
R330	3069104970	100K ohm	
R331		NOT USED	
R332L/R	3069472970	4.7K ohm	
R333		NOT USED	
R334L/R	3069102970	1K ohm	
R335L/R	3069109970	1 ohm	
R336, R337	3069221970	220 ohm	
R338	3069331970	330 ohm	
R339	3069229970	2.2 ohm	
R340	3069151970	150 ohm	
R341	3069473970	47K ohm	
R342	3069102970	1K ohm	
R343	3069473970	47K ohm	
R344	3069472970	4.7K ohm	
R345	3069473970	47K ohm	
R346	3069472970	4.7K ohm	
R347, R348	3069473970	47K ohm	
R349		NOT USED	
R350	3069103970	10K ohm	
R351	3069473970	47K ohm	
R352		NOT USED	
R353	3069102970	1K ohm	
R354	3069101970	100 ohm	
R355	3069104970	10K ohm	
R356~R359		NOT USED	
R360	3069103970	10K ohm	
R361	3069103970	10K ohm	
R362	3069473970	47K ohm	
VR101	3248310323	RES SEMI B-100K	

Ref. No.	Part No.	Description	Position
• Others			
FRONTEND	3928101020	FM FRONT-END CEA9-704	
SP	5548000210	TRANSDUCER DSQ 706P	
CNT101	4358103124	CNT ASS'Y 3P, 5395-0312, MAIN TO MAIN PCB	
CNT102	4358103106	CNT ASS'Y 3P, 5264, 5395-0310	
CNT103	4358106241	CNT ASS'Y 6P, 5264, 5395-06, MAIN TO FADER PCB	
CNT104	4428505710	CONNECTOR PLUG 3P, 5267-03A	
CNT105	4428505710	CONNECTOR PLUG 3P, 5267-03A	
CNT106	4358104168	CNT ASS'Y 4P, 5264-04, MAIN TO LINE OUT PCB	
CNT107	4358106182	CNT ASS'Y 6P, 5264, 5395 (04)-06, MAIN TO FADER PCB	
CNT108	4428505710	CONNECTOR PLUG 3P, 5267-03A	
CNT109	4428507010	CONNECTOR PLUG 9P, 5267-09A	
	4358001610	ANT RECEPTACLE	
	4428300910	CONNECTOR POWER PLUG 9P	
	2098000030	CHOKE TRANS	
	4002604700	MAIN P.C BOARD	

Volume P.C Board 4002604710

• Transistors			
Q401L/R	2208622107	NPN 2SC 1740(S) R-OHM(K)	
• Diode			
D401	2058599107	ZENER DZ-9.1BM 9.1V/50mW Silicon	
• Capacitors			
C401L/R	3409247872	ELECTROLYTIC 0.47 μF 50V SS M	
C402L/R	3409247872	ELECTROLYTIC 0.47 μF 50V SS M	
C403L/R	3579470130	CERAMIC 47 pF 50V J	
C404L/R	3679563120	MYLAR 0.056 μF 100V J	
C405L/R	3679333120	MYLAR 0.033 μF 100V J	
C406L/R	3409233872	ELECTROLYTIC 0.33 μF 50V SS M	
C407L/R	3679393120	MYLAR 0.039 μF 100V J	
C408L/R	3679152120	MYLAR 0.0015 μF 100V J	
C409L/R	3409233871	ELECTROLYTIC 0.33 μF 50V SA M	
C410	3409210121	ELECTROLYTIC 100 μF 10V SA M	
• Resistors (All Resistors are Carbon Film 1/5W J Type Unless Otherwise Noted)			
R401L/R	3069474970	470K ohm	
R402L/R	3069683970	68K ohm	
R403L/R	3069332970	3.3K ohm	
R404L/R	3069181970	180 ohm	
R405L/R	3069102970	1K ohm	
R406L/R	3069222970	2.2K ohm	
R407L/R	3069682970	6.8K ohm	
R408L/R	3069122970	1.2K ohm	
R409L/R	3069102970	1K ohm	
R410L/R	3069122970	1.2K ohm	
R411L/R	3069222970	2.2K ohm	
R412, R403	3069221970	220 ohm	
• Others			
	3228012310	POTENTIOMETER, TP128FB01YA 60H	
CNT104	4358103102	CNT ASS'Y 3P,5264-0312, VOLUME TO MAIN PCB	
CNT105	4428505710	CNT ASS'Y 3P, 5264,5395-03A, VOLUME TO MAIN PCB	

Ref. No.	Part No.	Description	Position
	4358103180	CNT ASS'Y 5264-0318, VOLUME TO MAIN PCB	
	4002604710	VOLUME P.C BOARD	

Fader P.C Board 4002604720

	3228012410	POTENTIOMETER, TP125U34NA 60H	
CNT103	4428505810	CONNECTOR PLUG 6P, 5267-06A	
CNT107	4428505810	CONNECTOR PLUG 6P, 5267-06A	
	4002604720	FADER P.C BOARD	

Line Out P.C Board 4003611100

• Integrated Circuit			
IC501L/R	2168220104	NJM 4558DD, DUAL OP. AMP.	
• Diode			
D501	2058599107	ZENER DZ-9.1BM 9.1V/500mW Silicon	
• Capacitors			
C501L/R	3409247871	ELECTROLYTIC 0.47 μF 50V SA M	
C502L/R	3409247021	ELECTROLYTIC 47 μF 10V SA M	
C503L/R	3509101130	CERAMIC 100 pF 50V K	
C504L/R	3409247871	ELECTROLYTIC 0.47 μF 50V SA M	
C505	3479210121	ELECTROLYTIC 100 μF 10V SA M	
C506	3409247021	ELECTROLYTIC 47 μF 10V SA M	
• Resistors (All Resistors are Carbon Film 1/5W J Type Unless Otherwise Noted)			
R501L/R	3069102970	1K ohm	
R502L/R	3069104970	100K ohm	
R503L/R	3069471970	470 ohm	
R504L/R	3069183970	18K ohm	
R505L/R	3069102970	1K ohm	
R506	3069333970	33K ohm	
R507	3069393970	39K ohm	
R508	3069101970	100 ohm	
R509	3069331970	330 ohm	
R510L/R	3069473970	47K ohm	
• Others			
	4328203610	RCA JACK	
	4428505610	CONNECTOR PLUG 4P, 5267-04A	
	6065101110	CAP CORD RCA	
	4003611100	LINE OUT P.C BOARD	

LCD P.C Board 4003611800

• Diodes			
D601 ~ D604	2058322101	SWITCHING 1N4148(M) 60V/500mW Silicon	
• Switchs			
M1 ~ M6	4658001110	TACT SWITCH EVQ-QSR05K, KPT1108	
BAND	4658001110	TACT SWITCH EVQ-QSR05K, KPT1108	
AS/PS	4658001110	TACT SWITCH EVQ-QSR05K, KPT1108	
• Lamps			
L1 ~ L3	2528101111	LAMP 14V/40mV, φ3, PCB TYPE	
• Others			
	2338021133	LCD SLA-0530A	
	4118532451	SUMI CARD CONNECTOR 32P X 41	
	8728000170	LAMP COLOR CAP, 910G-20, AMBER	
	4005606500	LCD P.C BOARD	

Ref. No.	Part No.	Description	Position

AM P.C Board 4003609900

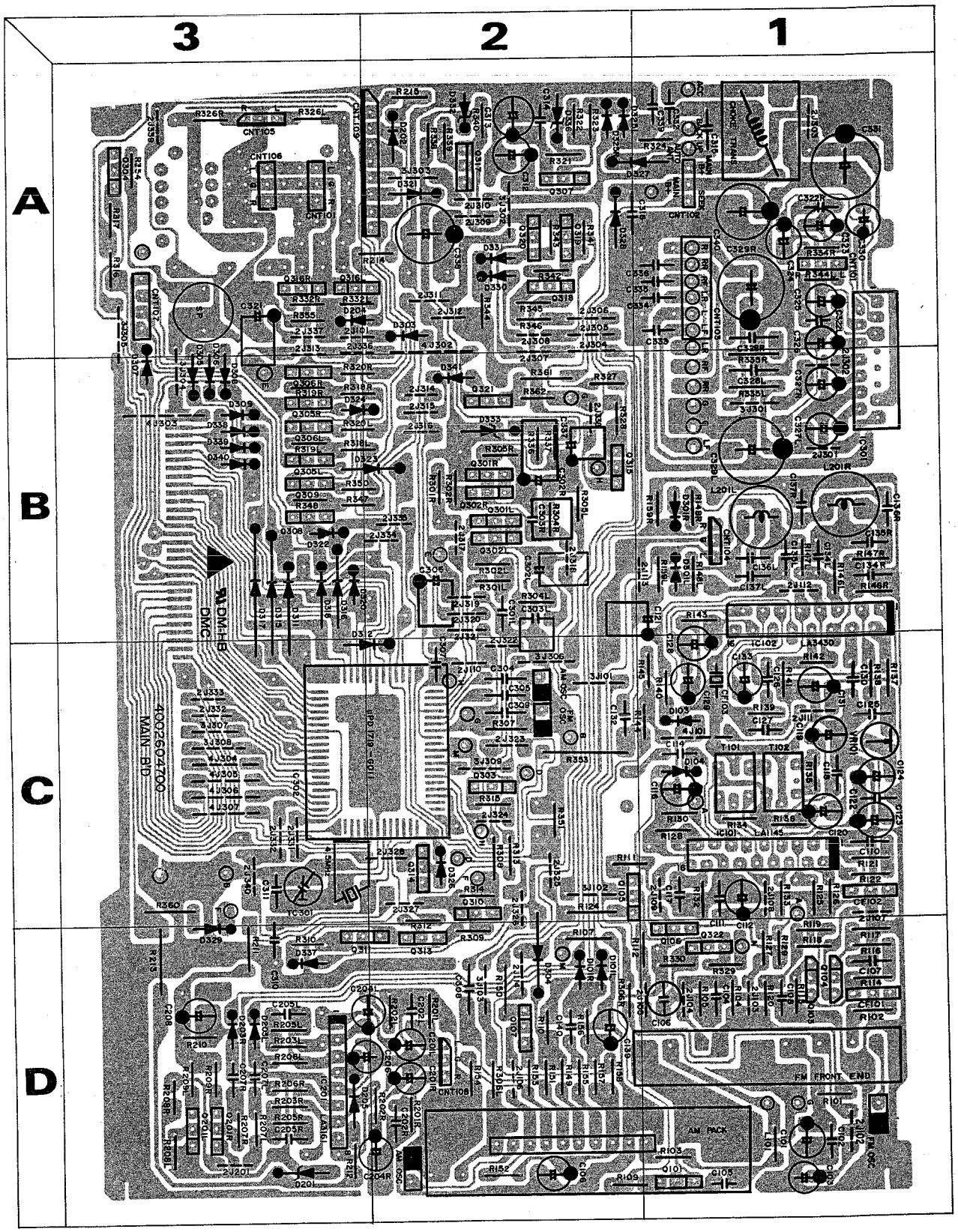
• Integrated Circuit			
IC701	2168017136	LA 1137, AM TUNER	
•Transistors			
Q701	2008610109	NPN 2SC 3199(Y) KEC	
Q702	2018217100	FET 2SK 2SK N-CHSANYO	
Q703	2008610109	NPN 2SC 3199(Y) KEC	
• Diodes			
D701 ~ LD703	2058819105	VARACTOR KV 1235Z	
• Coils			
C701	2648601840	COIL INDUCTOR 3.3mH, BLUE	
C702	2648601810	COIL INDUCTOR 100 μH, GRAY	
T701	2618401040	AM RF 1	
T702	2618401050	AM RF 2, WHITE	
T703	2638201180	AM OSC, RED	
T704	2848001120	AM IFT 1, YELLOW	
T705	2848001270	AM IFT 2, BLACK	
• Filters			
CF701	3908001080	CERAMIC CFM2-450BL	
CF702	3908001020	CERAMIC BFU-450C4N	
• Capacitors			
C701 ~ C705	3509223534	CERAMIC 0.022 μF 50V Z	
C706	3409222031	ELECTROLYTIC 22 μF 16V SA M	
C707, C708	3509223534	CERAMIC 0.022 μF 50V Z	
C709	3479210971	ELECTROLYTIC 1 μF 50V SA M	
C710	3509223534	CERAMIC 0.022 μF 50V Z	
C711	3509471230	CERAMIC 470 pF 50V K	
C712	3479210971	ELECTROLYTIC 1 μF 50V SA M	
C713	3509223534	CERAMIC 0.022 μF 50V Z	
C714	3679333120	MYLAR 0.033 μF 100V J	
C715	3409233971	ELECTROLYTIC 3.3 μF 50V SA M	
C716	3409247971	ELECTROLYTIC 4.7 μF 50V SA M	
C717	3409210121	ELECTROLYTIC 100 μF 10V SA M	
C718	3509223534	CERAMIC 0.022 μF 50V Z	
C719	3409247871	ELECTROLYTIC 0.47 μF 50V SA M	
TC701 ~ TC703	3838001010	TRIMMER CAPACITOR, TZ03-R200FR, 20P	
• Resistors (All Resistors are Carbon Film 1/5W J Type Unless Otherwise Noted)			
R701	3069104970	100K ohm	
R702	3069680970	68 ohm	
R703 ~ R705	3069104970	100K ohm	
R706	3069822970	8.2K ohm	
R707	3069104970	100K ohm	
R708	3069820970	82 ohm	
R709	3069334970	300K ohm	
R710	3069242970	2.4K ohm	
R711	3069243970	24K ohm	
R712, R713	3069103970	10K ohm	

NOTE: RESISTOR/CAPACITOR TOLERANCE;
D: ±0.5%, K: ±10%, M: ±20%, Z: +80%, −20

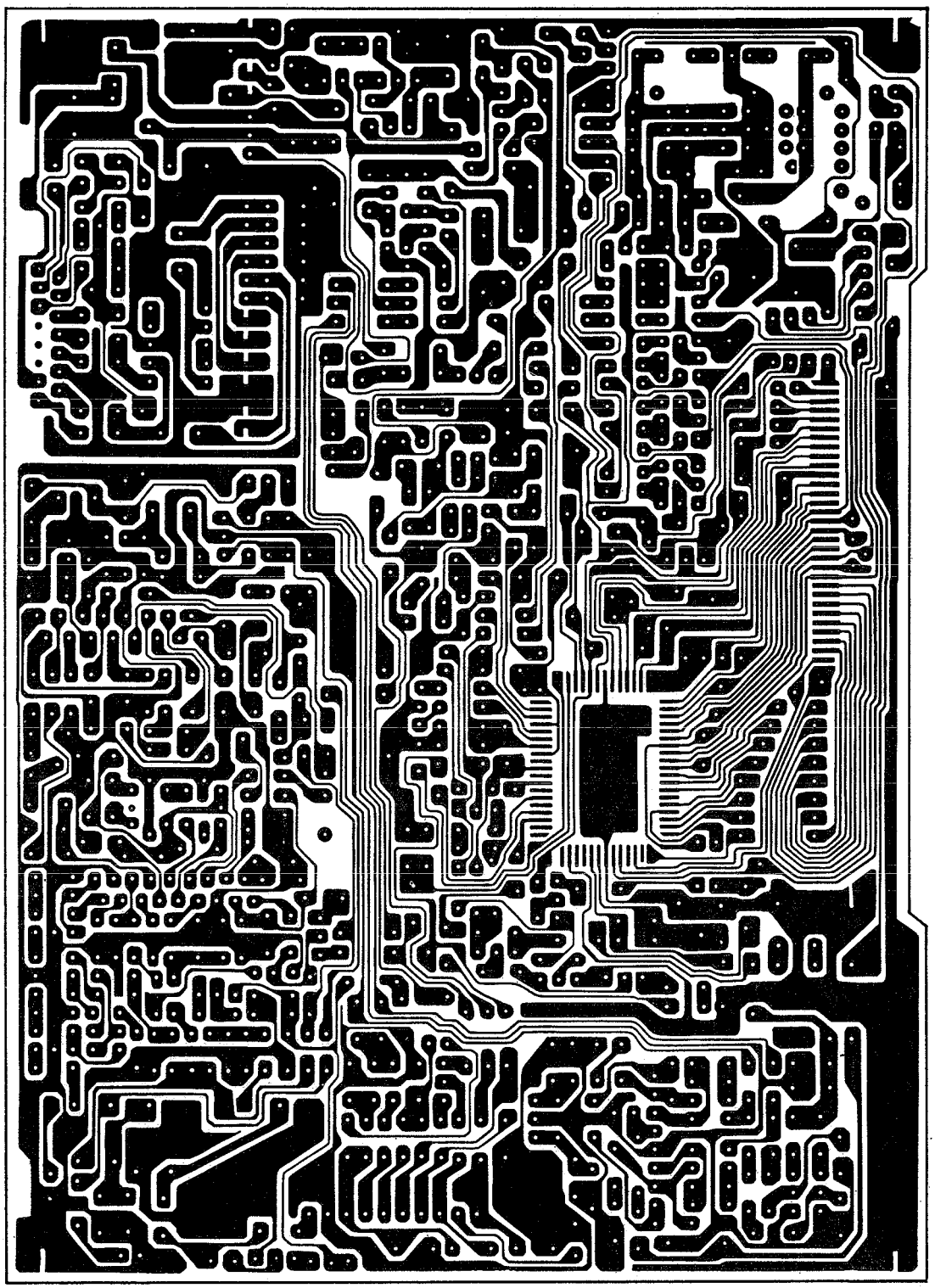
Top & Bottom View of P.C Boards

MAIN BOARD 4002604700

– TOP VIEW –

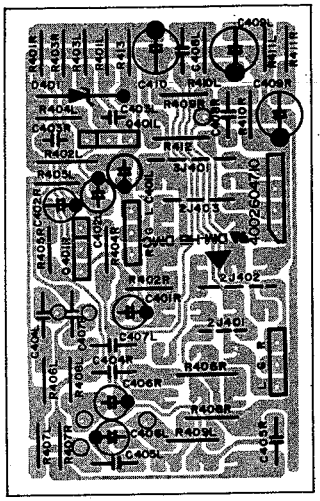


— BOTTOM VIEW —

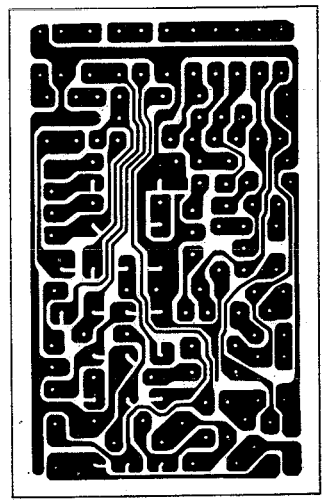


VOLUME BOARD 4002604710

— TOP VIEW —

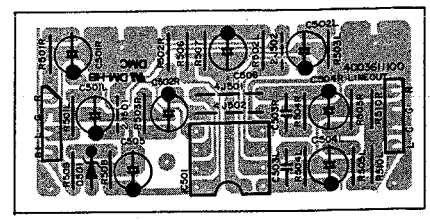


— BOTTOM VIEW —

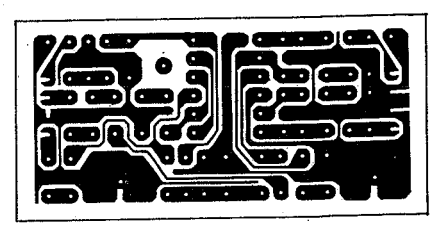


LINE BOARD 4003611100

— TOP VIEW —

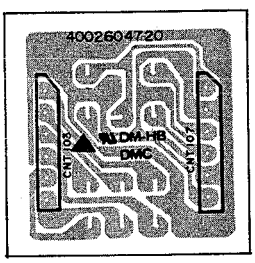


— BOTTOM VIEW —

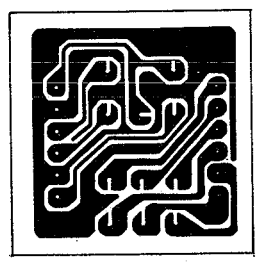


FADER BOARD 4002604720

— TOP VIEW —

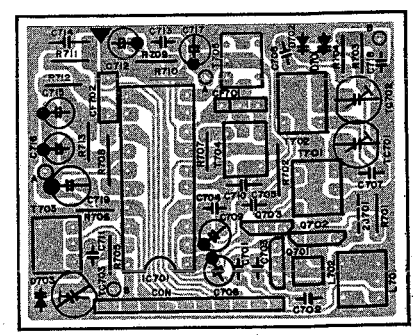


— BOTTOM VIEW —

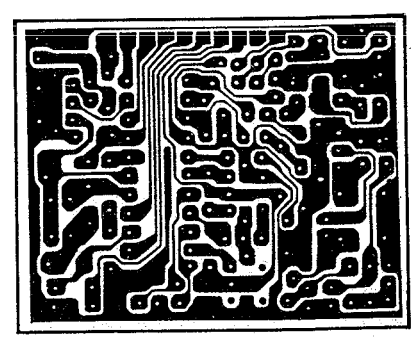


AM BOARD 4003609900

— TOP VIEW —

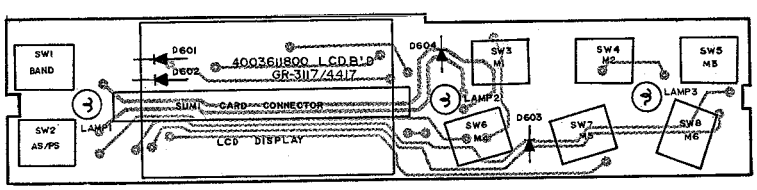


— BOTTOM VIEW —

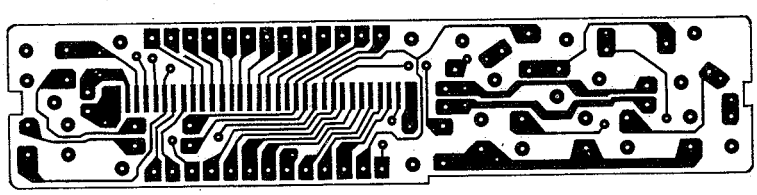


LCD BOARD 4003611800

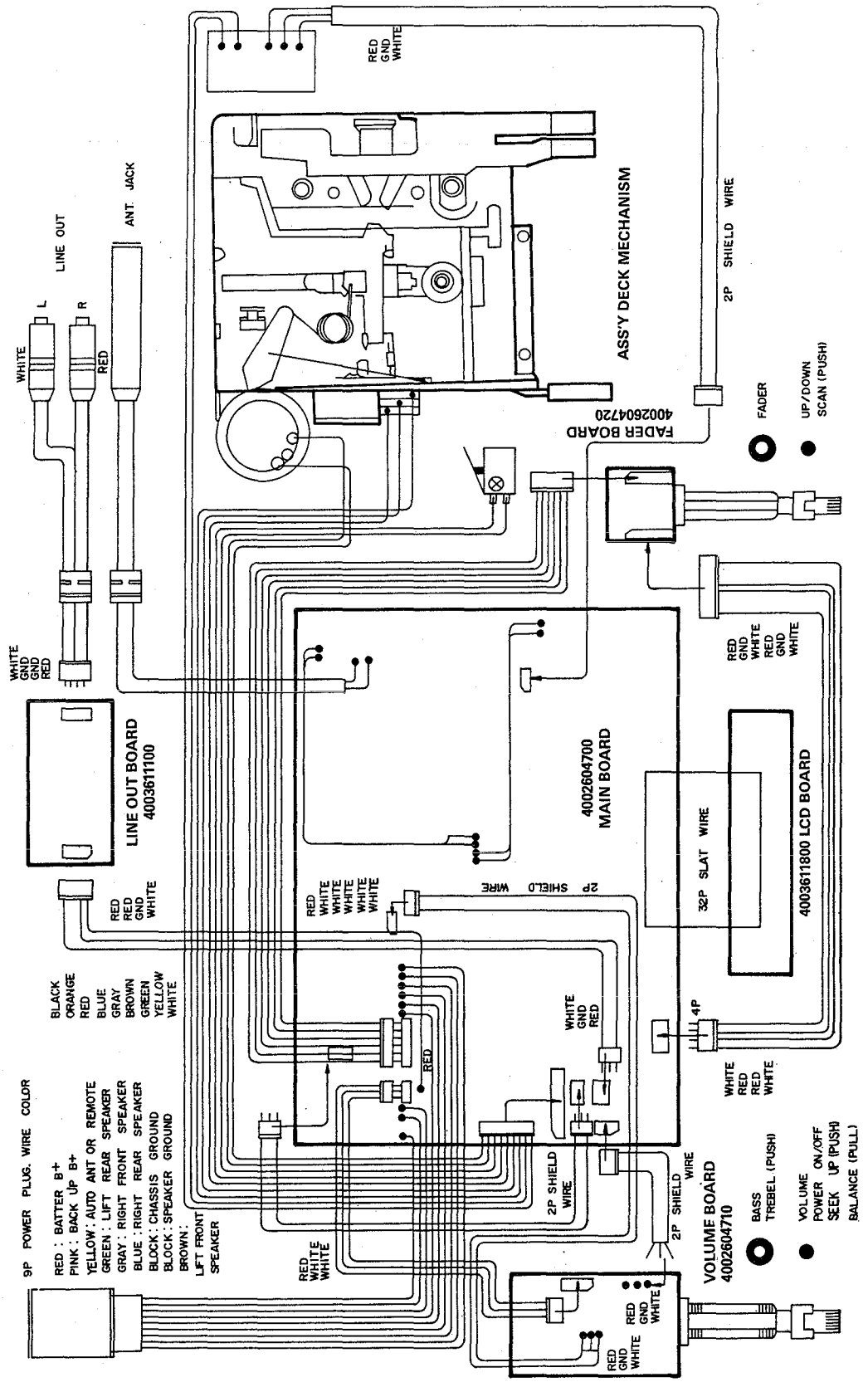
— TOP VIEW —



— BOTTOM VIEW —



Point to Point Wiring Diagram

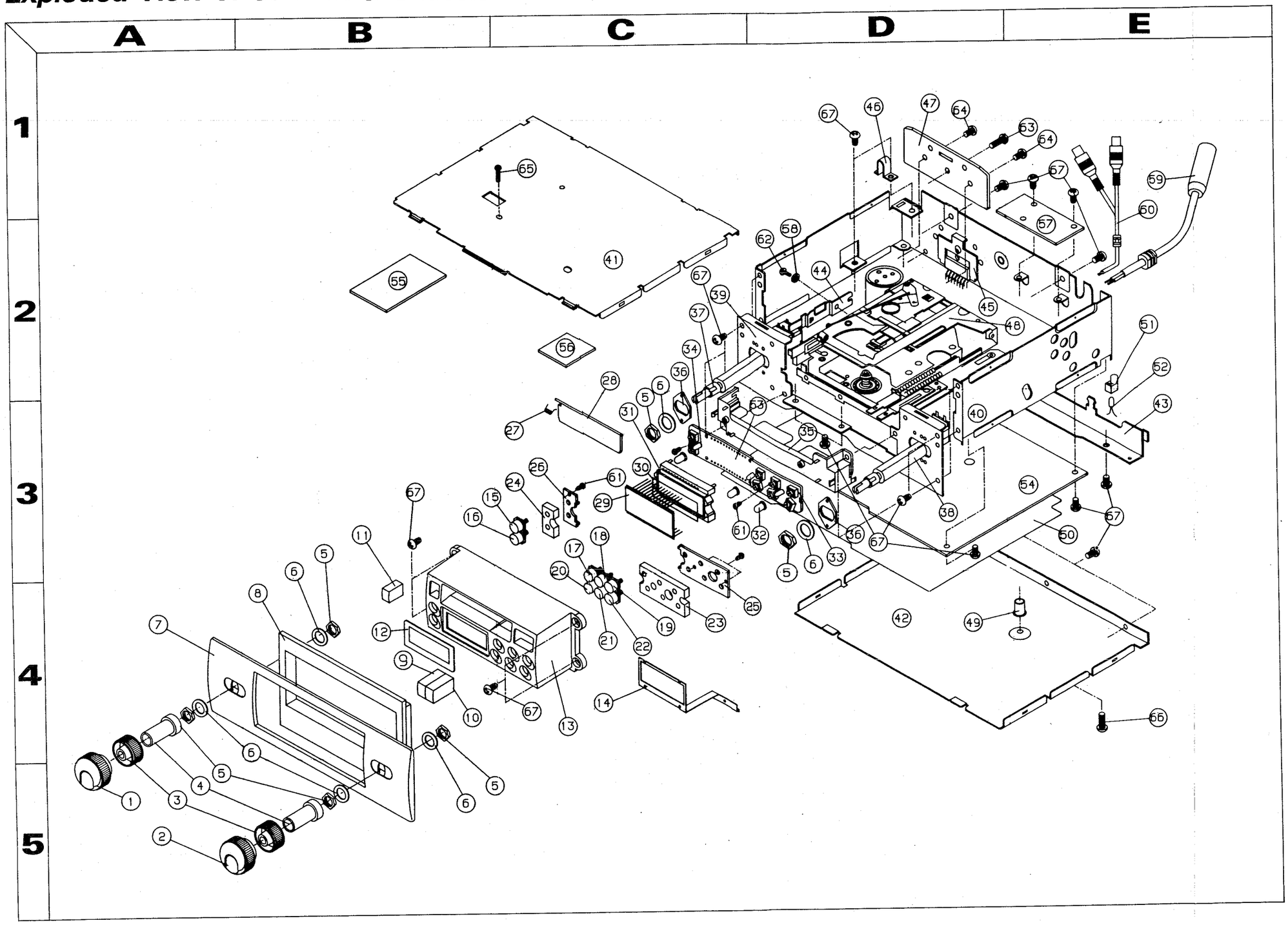


Exploded View Part List

Ref. No.	Part No.	Description	Q'ty	Position
1	048545066012	KNOB (IN) – L	1	5A
2	048545066011	KNOB (IN) – R	1	5A
3	8545066110	KNOB OUT	2	5A
4	6705002510	COVER SHAFT	2	5A
5		NUT HEX	3	5A
6		WASHER	3	4B
7	048503000915	PANEL TRIM	1	4A
8	6063200110	GASKET	1	4B
9	048545066211	KNOB REW	1	4B
10	048545066311	KNOB FF	1	4B
11	8545066410	BUTTON EJECT	1	3B
12	048555026611	WINDOW LCD	1	4B
13	048512003411	NOSE PIECE	1	4C
14	6505089210	PLATE LCD	1	4C
15	048545066517	BUTTON PRESET BAND	1	3B
16	048545066518	BUTTON PRESET AS/PS	1	3B
17	048545066511	BUTTON PRESET MTL/1	1	3C
18	048545066512	BUTTON PRESET 2	1	3C
19	048545066513	BUTTON PRESET 3	1	4C
20	048545066514	BUTTON PRESET 4	1	3C
21	048545066515	BUTTON PRESET 5	1	4C
22	048545066516	BUTTON PRESET 6	1	4C
23	6705010310	SPONGE PRESET "A"	1	4C
24	6705010410	SPONGE PRESET "B"	1	3C
25	8555026710	REFLECTOR "A"	1	4C
26	8555026810	REFLECTOR "B"	1	3C
27	6555604110	DOOR SPRING	1	3C
28	048535020834	DOOR CASSETTE	1	2C
29	2338021133	LCD SLA-0530A	1	3C
30	8538001010	FILTER LCD	1	3C
31	8553009110	REFLECTOR LCD	1	3C
32	8728000170	CAP COLOR 910G-20, AMBER	3	3C
33	4658001110	SW TACT, EVQ-QSR05K, KTP1108	8	3C
34	2528201111	LAMP 14V/40mA ϕ3, PCB TYPE	3	2C
35	8573006010	FRAME P.C.B	1	3D
36	6505051310	B.K.T FIXING	2	3D
37	3228012310	POTENTIOMETER, VOLUME/BAL./BASS/TREBLE	1	2C
38	3228012410	POTENTIOMETER, FADER	1	3D
39	6123202810	CHASSIS FRONT	1	2C
40	6122618710	CHASSIS BODY	1	3D
41	6123010210	COVER TOP	1	2D
42	6123010310	COVER BOTTOM	1	4D
43	6503013710	B.K.T DECK	1	3E
44	6505090110	B.K.T EJECT	1	2D
45	6505088110	B.K.T IC	1	2D
46	6515009410	HOLDER POWER CORD	1	1D
47	7505204110	HEAT SINK	1	1D
48	5708007710	DECK MACHANISM, S-2725-1	1	2E
49	8545058510	SUPPORTER DECK	1	4D
50	4833001810	COVER INSULATION	1	3E
51	8728001010	CAP COLOR 901G-20, YELLOW	1	2E
52	2528201011	LAMP 14V/40mA ϕ3, WIRE TYPE	1	5E
53	4003611800	LCD P.C. BOARD	1	3D
54	4002604700	MAIN P.C. BOARD	1	3E
55	4002604710	VOLUME P.C. BOARD	1	2B
56	4002604720	FADER P.C. BOARD	1	2C
57	4003611100	LINE OUT P.C. BOARD	1	2E
58	8319130011	WASHER SPRING ϕ3Y	1	2D
59	4353001610	ANT RECEPTACLE	1	1E
60	4328203610	RCA JACK	1	2E
61	8119120051	SCREW #1PTC 2×5Y	4	3C
62	8019126031	SCREW PM 2.6×3Y	1	2D

Ref. No.	Part No.	Description	Q'ty	Position
63	8119430081	SCREW SAM 3×8Y	1	1E
64	8109230061	SCREW #2BTC 3×6Y	2	1D
65	8009120121	SCREW BM 2×12	1	1C
66	8019130151	SCREW PM 3×15Y	1	4E
67	8119430051	SCREW SAM 3×5Y	25	3D

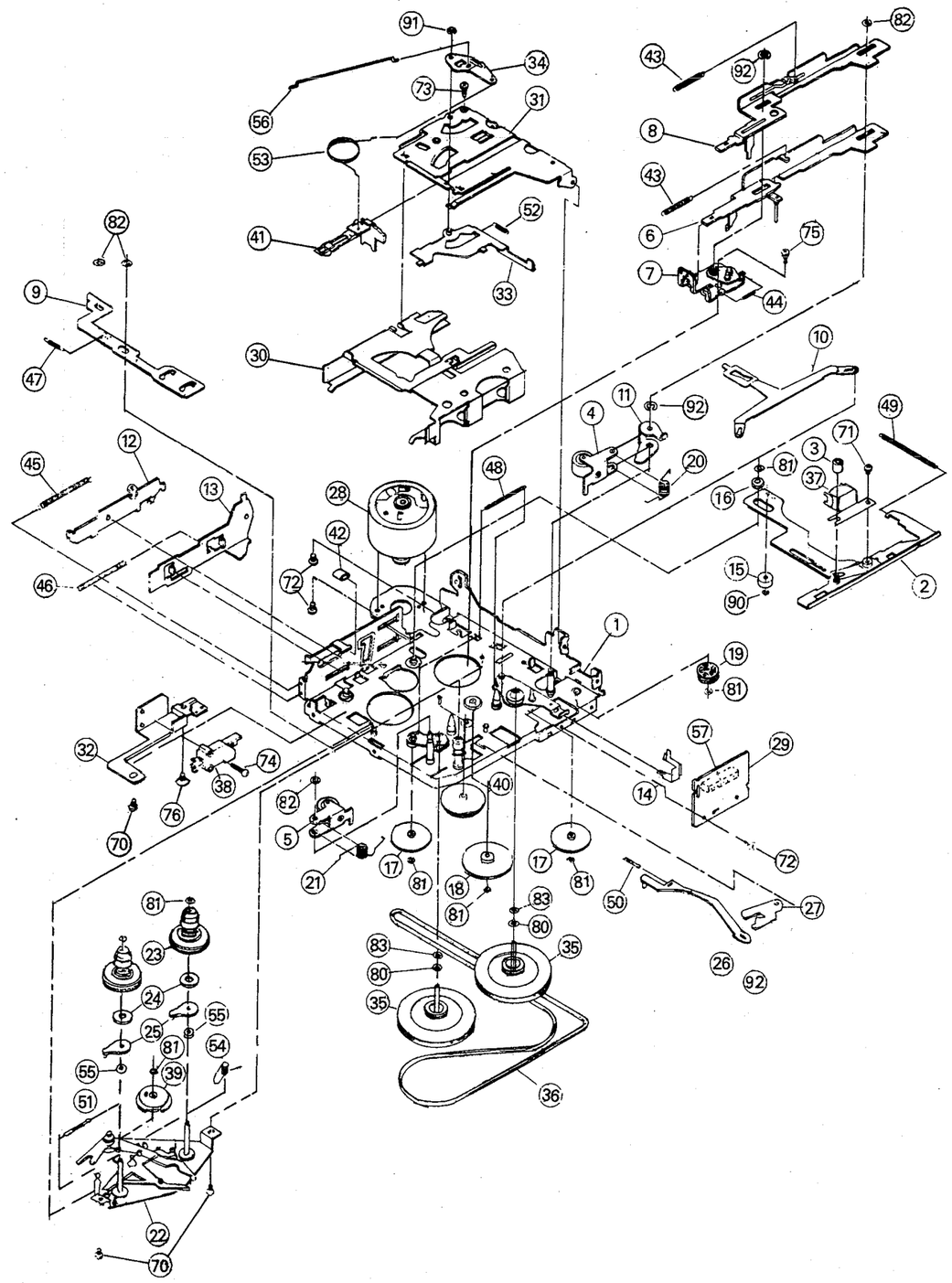
Exploded View of Cabinet & Chassis



Exploded View of Part List & Deck Mechanism Ass'y, S-2725-1

Ref. No.	Parts No.	Description	Mfr's Parts No	Q'ty
1	5708908240	MAIN CHASSIS ASSY	D001-C09	1
2	5708908250	HEAD PLATE ASS'Y	D006-E13	1
3	5708908260	AZIMUTH NUT	D162-E01	1
4	5708908270	PINCH ROLLER ASSY F	D017-E12/1	1
5	5708908280	PINCH ROLLER ASSY R	D017-E12/2	1
6	5708908290	FR LEVER A ASSY	D035-E03	1
7	5708908300	SIDE PLATE ASSY	D013-E12	1
8	5708908310	FR LEVER B	D155-D27	1
9	5708908320	FR CAM B	D112-D02	1
10	5708908330	TACK UP GEAR CONNECTION PLATE	D133-E06	1
11	5708908340	FR CAM A	D112-E12	1
12	5708908350	EJECT LEVER A	D129-D15	1
13	5708908360	EJECT LEVER B	D129-D16	1
14	5708908370	ACTUATER	D166-E15	1
15	5708908380	ROLLER A	D126-E24	1
16	5708908390	ROLLER B	D126-E21	1
17	5708908400	TAKE UP GEAR	D146-E11	2
18	5708908410	IDLE GEAR	D212-E12	1
19	5708908420	IDLE PULLEY	D151-E06	1
20	5708908430	PINCH ROLLER SPRING F	D197-E03	1
21	5708908440	PINCH ROLLER SPRING R	D197-E04	1
22	5708908450	REEL PLATE ASSY	D010-E04	1
23	5708908460	REEL GEAR ASSY	D016-E14	2
24	5708908470	FRICTION FELT B	D135-E09	2
25	5708908480	SENSER LEVER A	D201-E05	2
26	5708908490	TURN LEVER A	D175-E10	1
27	5708908500	TURN LEVER B	D175-E11	1
28	5708908510	MOTOR ASSY	D025-E08	1
29	5708908520	SWITCH P.C.B	PC-N222/1	1
30	5708908530	CASSETTE CASE	D122-C04	1
31	5708908540	ACTION PLATE	D118-D05	1
32	5708908550	SUB CHASSIS	D199-D08	1
33	5708908560	TURN PLATE A ASS'Y	D046-E01	1
34	5708908570	TURN PLATE B ASS'Y	D174-E08	1
35	5708908580	FLY WHEEL	D145-E07	2
36	5708908590	BELT	D144-E13	1
37	5708908600	HEAD	617-65-12	1
38	5708908610	QUICK ACTION SWITCH	QAS-1229-4	1
39	5708908620	CHANGE GEAR A	D196-D05	1
40	5708908630	CHANGE GEAR B	D196-D06	1
41	5708908640	CHASSIS PUSHER	D121-C02	1
42	5708908651	TUBE	CR60(3X5X6)	1
43	5708908660	SPRING	Z702-E41	2
44	5708908670	SPRING	Z702-E98	1
45	5708908680	SPRING	Z702-E102	2
46	5708908690	SPRING	Z702-E116	1
47	5708908700	SPRING	Z702-E96	1
48	5708908710	SPRING	Z701-E35	2
49	5708908720	SPRING	Z702-E101	1
50	5708908730	SPRING	Z702-E97	1
51	5708908740	SPRING	Z702-E99	1
52	5708908750	SPRING	Z701-E40	1
53	5708908760	SPRING	Z730-E01	1
54	5708908770	SPRING	Z722-E08	1
55	5708908780	SPRING	P507-E15	2
56	5708908790	COUPLING BAR	D165-E02	1
57	5708908800	SLIDE SWITCH	D061-D46	1
58~69	NOT USED			
70	5708908810	SCREW (PAN)	M2.6 X 3	4
71	5708908820	SCREW (BIND)	M2 X 3	1
72	5708908830	PRECISION SCREW	M2 X 3	2
73	5708908840	PRECISION SCREW	M2 X 4	1
74	5708908850	SCREW (BIND)	M2 X 8	1

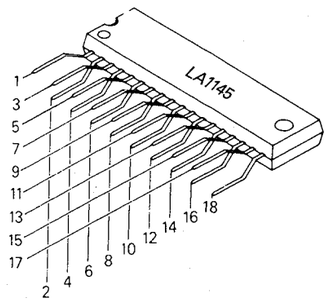
Ref. No.	Parts No.	Description	Mfr's Parts No	Q'ty
75	5708908860	SCREW (FLAT HEAD)	AOK M2.6X4.5	1
76	5708908861	SCREW (FLAT HEAD)	M2.6 X 4	1
77~79	NOT USED			
80	5708908890	PS WASHER	Z204-E01/5	2
81	5708908900	PS WASHER	Z205-E01/1	8
82	5708908910	PS WASHER	Z205-E01/3	5
83	5708908920	PS WASHER	Z205-E01/8	2
84~89	NOT USED			
90	5708908930	E RING	Z100-E01/1	1
91	5708908940	E RING	Z100-E01/5	1
92	5708908950	E RING	Z100-E03	2



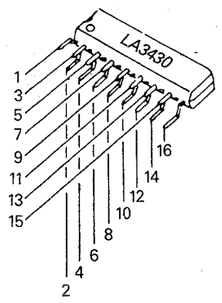
Semiconductor Lead Identification & Internal Diagram

1. LEAD IDENTIFICATION

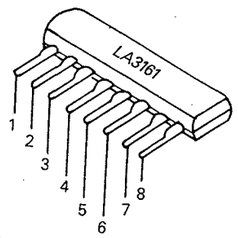
LA1145/IC101



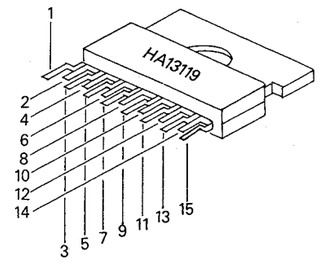
LA3430/IC102



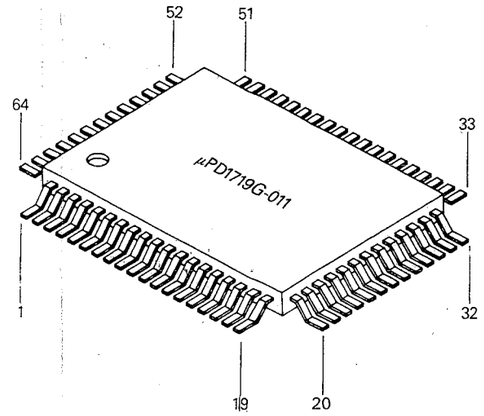
LA3161/IC201



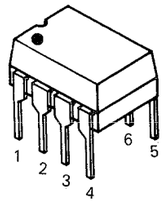
HA13119/IC301



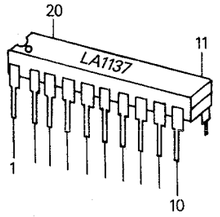
μPD1719G-011/IC302



NJM 4558DD/IC501L/R



LA1137/IC701



2SC 1740S/Q101
Q105
Q106
Q107
Q201L/R
Q304
Q306L/R
Q304
Q306L/R
Q307
Q309
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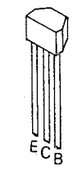
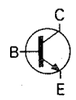
Q315
Q318
Q322
Q401L/R





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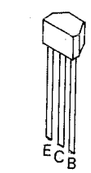

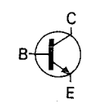

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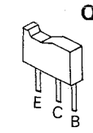

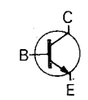

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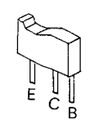
Q308
Q310
Q314
Q319
Q320
Q321



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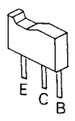

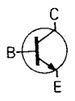

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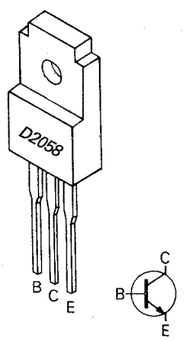
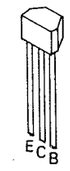
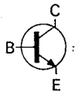


2SC 3199Y/Q701 Q703

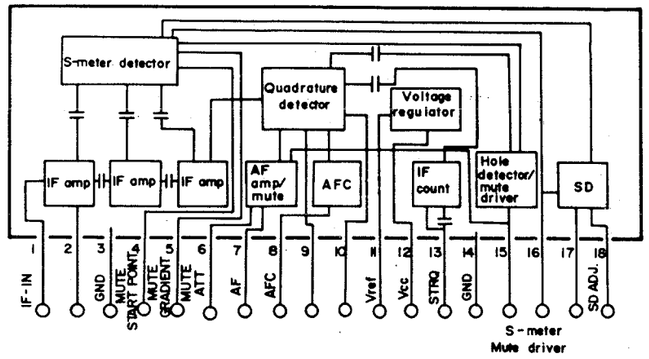




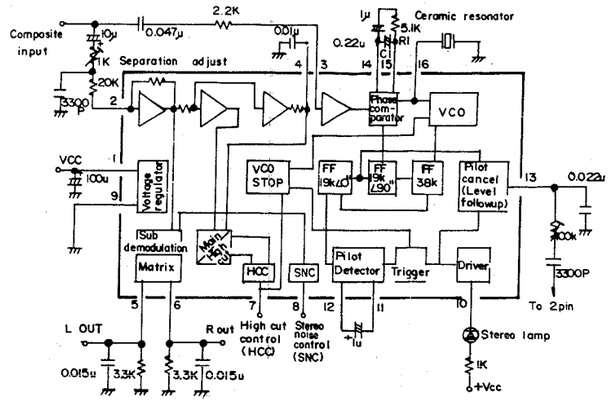
2SK 427R/Q702

2. IC INTERNAL DIAGRAM

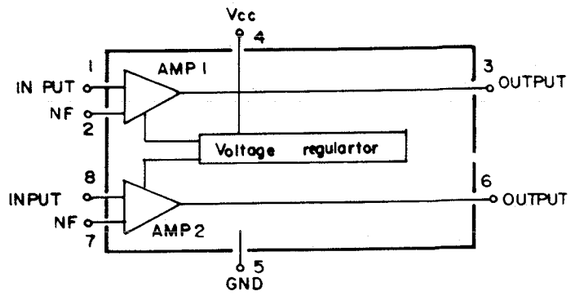
LA1145 (FM DETECTION/IC 101)



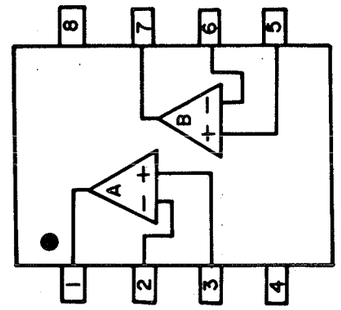
LA3430 (MPX/IC 102)



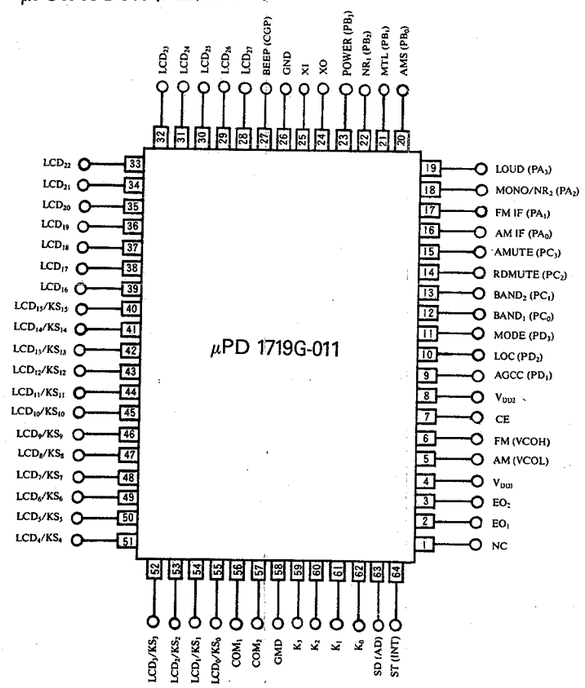
LA3161 (PRE AMPLIFIER/IC201)



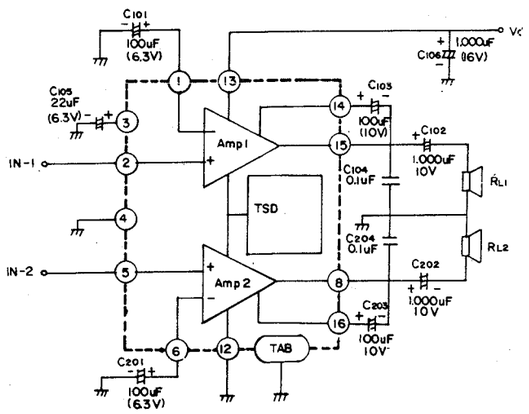
NJM45580DD (DUAL OP AMP/IC 501 L/R)



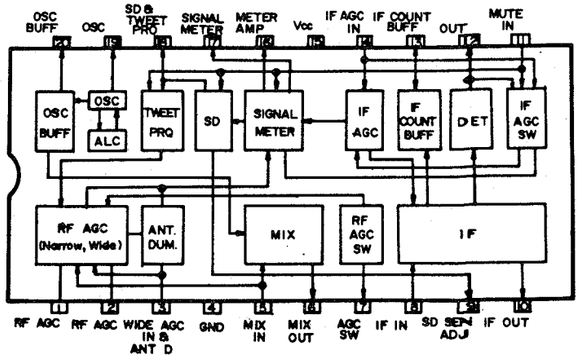
μPS1719G-011 (PLL/IC 302)



HA13119 (POWER AMPLIFIER/IC 301)



LA1137 (AM TUNER SYSTEM/IC 701)



IC & Transistor Voltage Chart

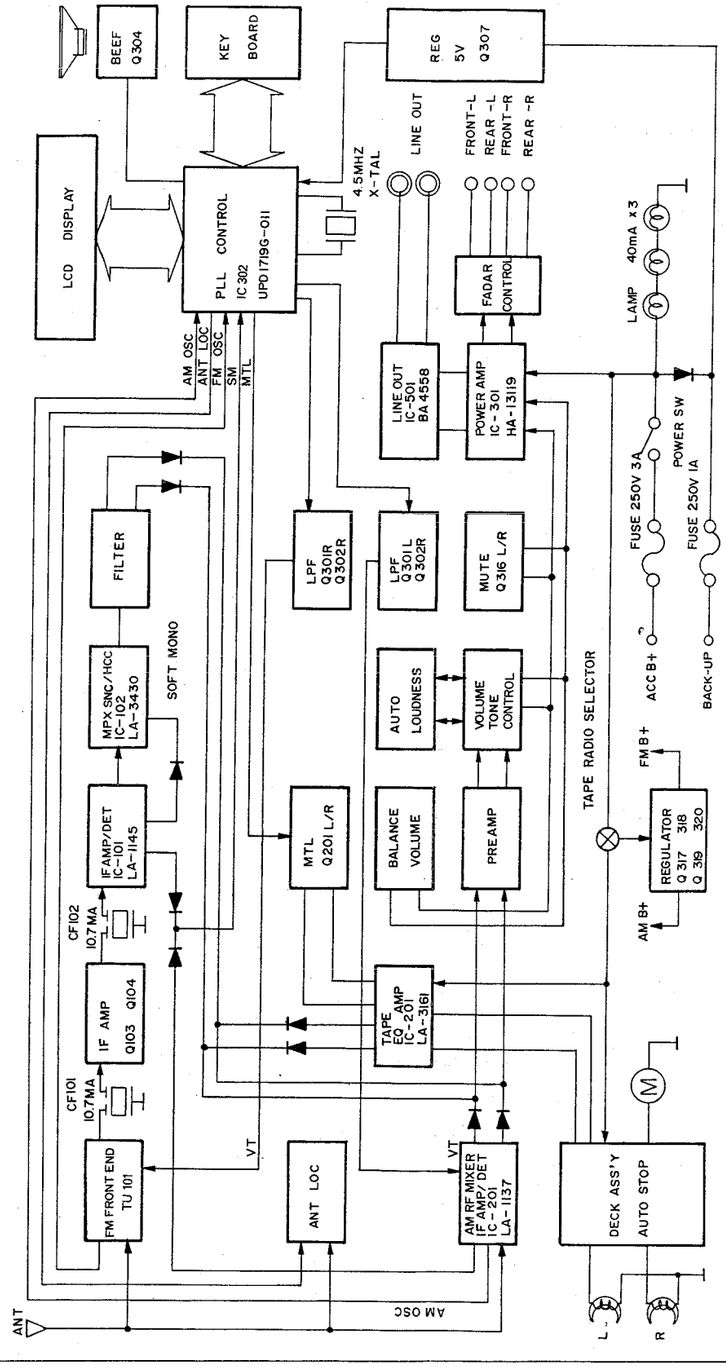
1. ICs

Pin No	IC101 (LA1145)		IC102 (LA3430)		IC201 (LA3161)		IC301 HA13119	IC302 (μPD171)				Pin No	IC501 NJM4558DD	IC701 LA1137
	No Signal	98.1 MHz 1 mV Input	No Signal	98.1 MHz 1 mV Input	No Signal	98.1 MHz 1 mV Input		Pin No	No Signal FM MODE	Pin No	No Signal FM MODE			
1	2.8V	2.8V	9.3V	9.2V	1.2V	1.2V	0.5V	1		33	2.3V	1	4.8V	2.3V
2	2.8V	2.8V	3.4V	3.4V	0.8V	0.8V		2	1.1V	34	2.3V	2	4.8V	1.5V
3	GND	GND	3.6V	3.6V	3.0V	3.0V	4.0V	3	1.2V	35	2.3V	3	4.7V	0.7V
4	4.2V	4.2V	2.9V	2.9V	7.7V	7.7V		4	4.7V	36	2.4V	4	GND	GND
5	0.48V	4.0V	4.1V	4.1V	GND	GND		5		37	2.3V	5	4.7V	2.1V
6	2.0V	2.0V	4.0V	4.0V	3.0V	3.0V	0.5V	6	2.0V	38	2.3V	6	4.8V	8.6V
7	5.0V	5.0V	0.09V	1.3V	0.8V	0.8V		7	4.7V	39	2.3V	7	4.8V	6.2V
8	5.0V	5.0V	0.07V	1.0V	1.2V	1.2V	7.1V	8	4.7V	40	2.4V	8	8.8V	1.5V
9	5.0V	5.0V	GND	GND				9		41	2.4V	9		1.2V
10	5.0V	5.0V	6.6V	0.8V			14.0V	10	4.6V	42	2.4V	10		8.6V
11	5.0V	5.0V	2.8V	2.8V				11	4.7V	43	2.4V	11		
12	9.7V	9.6V	2.8V	2.8V			GND	12	4.6V	44	2.4V	12		4.8V
13	0.5V	0.5V	0.5V	0.5V			14.4V	13		45	2.4V	13		
14	GND	GND	2.8V	2.8V			14.0V	14	4.7V	46	2.4V	14		4.8V
15	3.8V	0.7V	2.8V	2.8V			7.1V	15		47	2.4V	15		8.6V
16	0.4V	4.0V	3.6V	3.6V				16		48	2.3V	16		3.0V
17	0.45V	4.0V						17		49	2.3V	17		3.0V
18	0.03V	9.8V						18		50	2.3V	18		7.3V
19								19		51	2.3V	19		8.6V
20								20		52	2.3V	20		5.2V
21								21		53	2.3V	21		
22								22		54	2.3V	22		
23								23		55	2.3V	23		
24								24	2.5V	56	2.3V	24		
25								25	2.3V	57		25		
26								26		58		26		
27								27		59	2.8V	27		
28								28	2.5V	60	3.9V	28		
29								29	2.3V	61	4.3V	29		
30								30	2.3V	62	2.8V	30		
31								31	2.3V	63	3.4V	31		
32								32	2.3V	64	0.9V	32		

2. TRANSISTORS

	E		C		B	
	ON	OFF	ON	OFF	ON	OFF
Q101	19.7mV		0.5V		28mV	
Q103	0.8V		2.3V		1.5V	
Q104	1.6V	1.0V	7.0V	7.0V	2.3V	2.3V
Q105	40mV		58mV		0.4V	
Q106	20mV		58mV		0.6V	
Q107	38mV		50mV		20mV	
Q201L/R	27mV		27mV		21mV	
Q301L/R	19.3mV		1.7mV		0.6V	
Q302L/R	0.6V		1.7V		19.3mV	
Q303	0.4V		0.9mV		4.6V	
Q304	24mV		14.2V		22mV	
Q305L	1.8V		2.4V		3.1V	
Q306L	19.7mV		23mV		0.7V	
Q305R	1.8V		0.2V		4.6V	
Q306R	19.7mV		4.6V		3mV	
Q307	4.7V		10.2V		5.3V	
Q308	1.8V		20mV		4.6V	
Q309	19.7mV		4.6V		0.14V	
Q310	1.8V		7mV		4.4V	
Q311	20mV		7mV		4mV	
Q313	20mV		4.6V		5mV	
Q314	1.8V		6mV		4.7V	
Q315	4.7V		4.7V		5.3	
Q316L/R	25.6mV		27mV		25mV	
Q317	10.6V		13.1V		11.2V	
Q318	11mV		61mV		0.7V	
Q319	10.6V		10.5V		9.8V	
Q320	10.6V		0.7V		10.2V	
Q321	1.8V		5mV		4.6V	
Q322	19mV		27mV		0.6V	
Q401L/R	0.26V		4.4V		0.8	
Q701	24mV		19mV		19mV	
Q703	5.5V		18mV		18mV	
	S		G		D	
Q702	0V		0V		4.3V	

Block Diagram

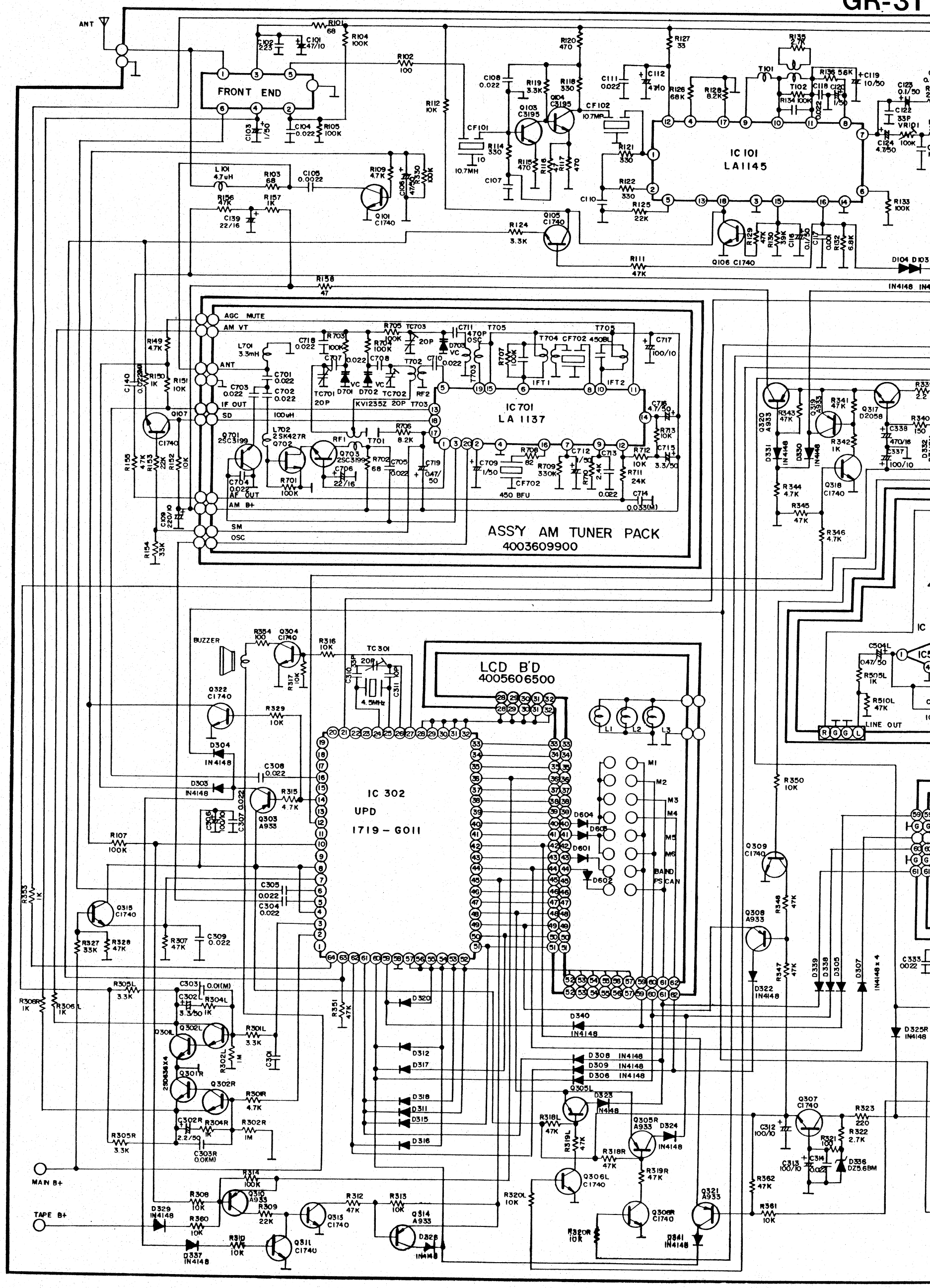


Note:

Schematic D
GR-31

A B C D

1 2 3 4 5



D E F G

Schematic Diagram
GR-3117

MAIN P.C BOARD
4002604700

DECK ASS'Y

IC 102
LA 3430

IC201
LA 3161

IC NJM4558

IC501R

IC501L

LINE OUT B'D
4003611100

VOLUME B'D
4002604710

FADER B'D
4002604720

HA 13119 IC301

LA 1145

LA 3430

LA 1137

NOTE
1. RESISTANCE VALUES ARE INDICATED IN OHMS UNLESS OTHERWISE SPECIFIED.
(K = 1,000 M = 1,000,000)
2. CAPACITANCE UNVALUES ARE SHOWN IN MICROFARADS UNLESS OTHERWISE NOTED
(P = MICRO — MICROFARADS)
3. COMPONENT VALUES ARE SUBJECT TO CHANGE WITHOUT NOTICES.
4. ALL VOLTAGES ARM REFERENCED TO GROUND UNDER THE FOLLOWING CONDITIONS.
DC: NO SIGNAL EXCEPT WHERE INDICATED.